

DESIGN FOR DEVELOPMENT: Midwestern Ontario Region

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Phase 1: Analysis

Hon. C.S. MacNaughton
Treasurer and
Minister of Economics

H. I. Macdonald
Deputy Treasurer and
Deputy Minister of Economics

Department of Treasury and Economics
July 27, 1970



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DESIGN FOR DEVELOPMENT:

MIDWESTERN ONTARIO DEVELOPMENT REGION

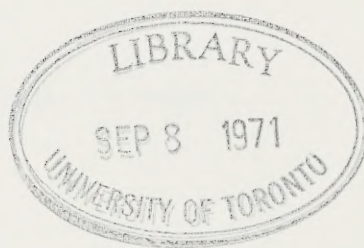
PHASE I: ANALYSIS

a Technical report

Ontario

Regional Development Branch,
Department of Treasury and Economics,

July, 1970



Regional Development Branch,
880 Bay Street,
Toronto, Ontario.



ONTARIO
DEPARTMENT OF TREASURY AND ECONOMICS

PARLIAMENT BUILDINGS
TORONTO

June 24, 1970

Mr. H. I. Macdonald,
Deputy Treasurer of Ontario
and Deputy Minister of Economics,
Chairman, Interdepartmental Advisory
Committee on Regional Development,
Seventh Floor, Frost Building,
Queen's Park, Toronto.

Dear Mr. Macdonald:

I am pleased to submit to the Interdepartmental Committee on Regional Development the accompanying Report, Design for Development: Midwestern Ontario Region. For this Region, the Report contains the analysis phase of our Approach to Plan. The second phase, which will be concerned with policy recommendations, will be completed later in the year.

Research on this Report has benefited substantially from information and recommendations from the Midwestern Ontario Regional Development Council and the Midwestern Ontario Regional Advisory Board. Valuable assistance also has been forthcoming from other sources, especially provincial departments and agencies.

The findings of the study are respectfully submitted for your consideration.

Yours sincerely,

A handwritten signature in cursive script, reading "Richard S. Thoman".

Richard S. Thoman,
Director,
Regional Development Branch,
Department of Treasury and Economics.

Encl.

FOREWORD

This report is the second of a series to be prepared by the Regional Development Branch for Southwestern Ontario. It presents an initial analysis of the Midwestern Ontario Development Region's social, economic and physical resources, trends and problems. Many of the problems discussed in this study were first identified by various other government departments, and in many cases policies and programs intended to alleviate them have been initiated. The report will be refined as a result of commentary from sources inside and outside of Government. It will be followed by a Phase II report which will recommend planning solutions and development policy for meeting the needs which have been identified. A similar study has already been prepared for the Niagara (South Ontario) Development Region and others will be carried out for the remaining two development regions in Southwestern Ontario - Lake Erie and St. Clair - as well as for the rest of the province.

This study required the cooperation and assistance of a great number of organizations and individuals. In particular, appreciation is herewith expressed to: the Midwestern Ontario Regional Development Council, the Midwestern Ontario Regional Advisory Board, members of the business community, Industrial Commissioners, Planning Boards, Town Clerks, Canada Manpower Centre personnel, members of the academic community and various government departments. The work on land use and land capability is being carried out, for the

MODA Region as well as for all other parts of Ontario when Canada Land Inventory and other data are available, under joint ARDA financing of the federal and provincial governments. Finally, a statement of gratitude is due to the Ontario Statistical Centre for continuous and effective cooperation.

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SUMMARY

In terms of overall social and economic growth, the performance of the Midwestern Ontario Region is above the provincial norm, suggesting a viable region with a high-growth potential. Distribution of this growth, however, is unbalanced.

The greatest proportions of population and overall development growth have concentrated in a corridor focusing on the urban centres of Kitchener-Waterloo, Guelph, Galt-Preston-Hespeler (commonly referred to as the Golden Triangle). To a degree, this growth also merges into Stratford. The Golden Triangle shows distinctive development pulls towards the Toronto-Centred and Niagara Regions, while Stratford shows some orientation towards London. Within the last decade development has been directly stimulated by Highway 401, and aligned along the corridor of Highway 7. The 401-Highway 7 corridor, comprising only 14 per cent of the total land area, contains almost 61 per cent of total regional population. More important, between 1951 and 1966 over 90 per cent of total regional population growth occurred in this area.

The remaining 86 per cent of the Region's land area, accounting for 39 per cent of the total population, had only 10 per cent of the population growth during the 1951 to 1966 period. This area, located beyond the 401 corridor, generally falls below provincial standards of growth. It suffers from heavy out-migration,

lacks variety in employment opportunities and has below average social and cultural facilities. In brief, it is rapidly being left behind in regional and provincial development. This part of the Region is predominantly agricultural with small urban centres scattered throughout to serve the needs of the agricultural community.

Economic Development

The Region has a well diversified economic base in both agriculture and manufacturing. Both Huron and Perth counties are heavily reliant upon agriculture, and Wellington County to a lesser degree. Waterloo County is essentially a manufacturing area.

Agriculture - The value of products sold in the Region increased by more than 124 per cent between 1951 and 1966 compared to a provincial increase of only 76 per cent over the same period. Livestock is the most significant cash agricultural product in the Region, accounting for over 29 per cent of the total value of agricultural products sold in 1966.

Cash receipts per farm operator are above the provincial average. In 1965, the average receipts per operator were \$12,600 compared to \$10,000 in the Province. All counties in the Region had cash receipts per operator above the provincial norm, with Waterloo County being the highest at \$16,800 followed by Perth County (\$12,600), Huron (\$11,600), and Wellington (\$11,400).

There were 2,850 fewer farms in 1966 than in 1951. The average size farm increased during this period from 128 acres to 145 acres, indicating a degree of consolidation.

The decline in farm acreage, however, was relatively insignificant. Only some 100,000 acres were taken out of farmland compared to over two million acres still being farmed in 1966. Most of the decreases occurred in the more urbanized counties of Waterloo and Wellington.

Employment in agriculture has declined. An estimated 4,000 people left farming for other employment between 1961 and 1966.

Manufacturing - Waterloo County is the dominant manufacturing area of Midwestern Ontario, accounting for over 67 per cent of total employment in the region. Five centres - Galt, Guelph, Kitchener, Stratford and Waterloo - together accounted for over 80 per cent of total manufacturing employment.

The rate of growth of manufacturing employment in this Region has been well above that of the Province as a whole. The fastest growing industries (relative to the Province) have been rubber, textiles and transportation equipment.

Manufacturing outputs are shipped mostly to points in Central and Southwestern Ontario (over 45 per cent by value), most of which are inputs to other manufacturers. Only five per cent is

consumed within the Region.

In relation to the sources of raw materials and manufactured inputs, only 13 per cent came from within the Region. Ontario as a whole, but particularly the Niagara and Central Ontario regions, provided almost two-thirds of all manufactured inputs.

In the survey of manufacturing carried out by the Regional Development Branch in 1969 and 1970, manufacturers in Midwestern Ontario ranked highway and rail transportation systems, along with proximity to markets, as the Region's most favourable location factors affecting the operation of their plants.

Skilled labour is in short supply in Huron and Perth counties, where industry has most recently become established. Many of the workers are unskilled and have not yet oriented themselves to methods of industrial production. As a result, labour turnover, particularly in Huron County, is higher than in the Region as a whole.

Problem Identification

1. Per capita income in the Midwestern Ontario Region is generally lower than in the Province reflecting a different industry mix and a different socio-economic structure. This is especially serious in the more rural parts of the Region, where supplemental sources of income in addition to agriculture, are badly needed.

2. Employment opportunities are inadequate in the more rural counties. The reduction in the agricultural labour force, the remoteness from social and cultural amenities offered by the major regional centres and the absence of a diversified economic structure has resulted in considerable out-migration of the population, particularly in the younger age groups.
3. Even though the agricultural sector is viable, there is a continuing need to increase the proportion of farms grossing over \$10,000 in the value of agricultural products sold. In 1966, almost 60 per cent of all commercial farms in the Region were below this level. In Huron and Wellington counties, the proportions were greater than 60 per cent.

Community and Regional Environment

The Midwestern Ontario Region is experiencing urbanization problems within its developing Southeastern urban corridor, and along its Lake Huron recreational shoreline. For example, Kitchener-Waterloo and Stratford, which are located in an intensively used agricultural area, need to optimize the use of land between agricultural and urban demands. Also of significance is the unique Mennonite community and the encroachment on their agricultural

lands by urban development.

Because of the physiographic characteristics of the land and the increased rate of urban development, many communities are being confronted with problems of water supply and sewage disposal. Compounding the problem is the increased cut of woodlots thereby resulting in more rapid water run-off.

The Lake Huron shoreline is becoming increasingly developed as a private cottage and recreation complex. A case can be made for extending the orderly development of such facilities while preserving part of this land for public recreational use.

Protection of the community and regional environment is becoming perhaps the most pressing need of modern technologically oriented urban society. This encompasses minimizing air, water, soil, scenic and noise pollution; preserving open space between centres and preventing urban sprawl along highways.

People in all parts of the Midwestern Ontario Region should have a wider choice of employment opportunities and a more complete variety of services. One of the objectives of Design for Development is to create a viable system of urban areas which offer concentrated ranges of choices and opportunities to all the people of the Region. The high cost of services may well make it impracticable to stimulate the growth of every urban centre in the future. A case can be made for concentrating the provision of services in a selected few urban

centres where the necessary population size and associated employment opportunities and choices can serve the needs of the northern and western parts of the Region.

Briefly, the Midwestern Ontario Region has a well diversified economic base, a manufacturing sector growing faster than in the Province of Ontario generally, an agricultural sector whose return per farm operator is far superior to the provincial average and vast still underdeveloped recreation potential. At the same time problems are evident. These are associated with the rapid growth and urbanization in the east, the loss of population and static economies in the west and the unguided proliferation of private recreation development along Lake Huron. Most of the problems relate to land use and space adjustment, economic development and environmental control.

CHAPTER I

INTRODUCTION

The Regional Development Program

Few truly fundamental evolutionary changes take place overnight. The process of regionalizing coordinated provincial government response to local needs had its beginning five years ago in January, 1965, when the Province and the Federal Government jointly sponsored a Conference on Areas of Economic Stress in Canada at Queen's University, Kingston. One month later, the Province was host to a major International Conference on Regional Development and Economic Change.

In the Spring of 1966, the Ontario Government tabled its white paper, Design for Development. This document set forth, in its philosophy of inter-regional equity, interdepartmental co-ordination and inter-governmental partnership, what was to become the basic policy for Ontario's emerging regional development program. In December, 1968, a second white paper, Design for Development, Phase II, outlined the Government's objectives for the parallel program of reorganizing the existing structure of local governments into larger and more effective regional government units.

These two white papers and subsequent Cabinet announcements have detailed certain fundamental regional development policies. These are:

1. That the vital role of the business community be recognized, that its contribution to the provincial economy be continuously assessed in view of provincial needs and resources, and that provincial policies be formed to encourage a rational expansion of private enterprise.
2. That individuals be encouraged to develop their full capabilities through provision of a climate of expanding social and economic opportunities for each region.
3. That regional and resource policies encourage adequate development of the natural environment while conserving the aesthetic qualities of that environment.
4. That the timing and impact of Ontario's large and expanding public expenditures be planned and coordinated effectively to fulfil, in an orderly way, the needs of the regions in the Province as well as of the Province itself.
5. That this be a Program for Regional Development which must necessarily involve a working partnership between all of the people of Ontario and government.

The institutional machinery established for implementing these policies includes a Cabinet Committee on Policy Development, chaired by the Prime Minister; an Interdepartmental Advisory Committee on Regional Development, chaired by the Deputy Treasurer and Deputy Minister of Economics; Regional Advisory Boards comprised of provincial field staff and Regional Development Councils with membership drawn from local governments and private groups.

The Regional Development Branch of the Department of Treasury and Economics is responsible for the preparation of regional plans for consideration by the Advisory Committee. These plans, based upon recommendations of the Regional Development Councils and the Regional Advisory Boards, plus results of research from universities, from other Departments and from the Branch itself, will be presented in two consecutive reports - this current Phase I analysis of trends and problems, and a subsequent Phase II report on planning policy recommendations. Both will be forwarded to the Regional Development Councils for "grass roots" reaction before consideration by the Cabinet Committee as policy.

The Background to this Report

The Regional Development Program has been undertaken in three stages. The Inventory stage, completed in 1967, was an

assessment of all existing information, projects and policies of Ontario departments which were concerned with regional development. An active program of university research in regional development, also initiated that year, continues to contribute in-depth analysis of specific development issues.

The Evaluation Stage, completed in 1968, consisted of two parts. One involved the preparation of five-year program recommendations by the Regional Development Councils and parallel reports from the Regional Advisory Boards - both of which provided local evaluation of the nature of problems confronting each region. The other part, carried out by the Branch, involved the collection and assessment of some 63 statistical indicators of social and economic change for townships, counties and districts over the 1951-1966 period. The growth of each of these smaller areas was compared with the Province as a whole to provide a comprehensive evaluation of how each part of every region was faring in population growth, agriculture, manufacturing, services, city growth and other aspects of development.

The third planning stage begins with the present Phase I report which is largely concerned with analysis of the Region's social, economic and physical resources, trends and problems. A succeeding Phase II report on planning policy will recommend planning solutions and development guidelines for meeting the needs identified in this report.

The basic purpose of the current document is to draw together the analysis of opportunities and problems identified by the Regional Development Council, the Regional Advisory Board, other departments and our own staff so that a preliminary assessment may be made of relative needs and priorities for each zone and the entire region.

It is the latter task of defining future goals and needs for the region that most demands resolution before proceeding with later stages in the Regional Development Program. This report is presented as a tentative starting point in seeking concurrence among departments and between levels of government about the most desirable direction and degree of emphasis for future regional change. We intend to make the review of this report an open and frank dialogue, completely in keeping with the program's continuing emphasis on Partnership in planning.

Methodology and Sources

The ten development regions, which together form a mosaic over the entire Province of Ontario, are essentially those which were developed by Camu, Weeks and Sametz in their 68 region system for all Canada.¹

¹Pierre Camu, E. P. Weeks and Z. W. Sametz, Economic Geography of Canada, Toronto, MacMillan of Canada, 1964.

The major reasons underlying the utilization of this regional system are:

1. Their boundaries are co-terminus with local political boundaries. The Provincial Government's policy of entering into development partnerships with local government is thus enhanced. Further, the regional boundaries are also co-terminus with those used by the Dominion Bureau of Statistics in their data collection program, hence, a valuable source of statistics useful for purposes of regional analysis was immediately available to the Ontario Government upon initiation of the Regional Development Program.
2. The regions are for the most part, urban-centred and/or functionally defined, and hence will enable the government to fulfil its stated objective of selecting "... those urban centres--both large and small--which will be appropriate growth points for the type of region in which the centre is located." (Design for Development, Phase II, p. 6).

It should be noted that despite their functional value for purposes of administration or research, the boundaries of the ten regions are not regarded by the Government as being

fixed for all time. Where development or other relevant circumstances warrant it, boundaries are subject to revision. Such boundary changes would be preceded by full discussions with all local government units and regional development councils affected and after careful evaluation of appropriate regional planning studies.

The Midwestern Ontario Region is being analysed within the concept of a standardized research outline known as Approach to Plan. Approach to Plan is a twelve step process.

In Step 1, provincial goals related to regional development have been concisely stated. In Steps 2 through 6, each of the Midwestern Region's economic, social and environmental characteristics has been studied by the Regional Development Branch and regional problems have been identified. An objective analysis of past spatial and sectoral trends has been completed on a Province-wide basis. By comparing the performance of the smallest geographical units in the Province as a whole, it was possible to derive aggregate performance areas from some 63 key indicators of population and economic change. In the context of these performance areas, an economic base study and a gross land use study have been prepared for the Region.

The preparation of this Report has involved three steps.

First, published and unpublished research material relating to the Midwestern Region were reviewed, in particular data from the Dominion Bureau of Statistics, special university studies and studies conducted by various departments of the Government of Ontario. Data for the land use and land capability studies were derived primarily from the Canada and Ontario Land Inventories. Second, industrial performance within the Region was analysed using raw data collected in the field by the Regional Development Branch in its Survey of Manufacturing. The analysis itself is based upon accepted statistical and planning techniques such as shift-share analysis, location quotients, basic non-basic ratios, and labour participation rates. Third, discussions were held with Industrial Commissioners, Town Clerks, representatives of Planning Boards and Officials of Canada Manpower Centres.

Possible centres of opportunity have also been examined within the framework of central place theory considering particularly the size of each centre and its associated urban area, its past rate of growth, its inter-industry mix, its infrastructure and its linkages with other urban centres. Potential centres of opportunity are being evaluated with careful regard both to the function they are expected to carry out in their respective performance areas and the provincial policy of "nodalized decentralization." All in all, the pattern of growth points and their

journey-to-work zones should comprise a geographical mosaic which would offer employment opportunities to essentially all urban and rural people in the Midwestern Region.

During the steps outlined above the opinions and recommendations of the Regional Development Councils, Regional Advisory Boards and Government Departments have been solicited and evaluated. (See Appendices F and G). Special university studies related to selected aspects of regional development have also been initiated.

In step 7, all the preceding Steps have been re-evaluated, and regional goals have been tentatively selected. This document represents Steps 1 through 7. In Phase II, which includes Steps 8 through 12, specific regional development plans will be formulated. First, centres of opportunity will be selected for the Midwestern Region using the procedures outlined above. Special consideration will also be given to activities and planning considerations that are not specifically oriented towards centres of opportunity, in particular the resource-oriented industries and the social infrastructure.

Tentative regional development policies will then be formulated for the Midwestern Region. These policies will be coordinated with the objectives of other Provincial Departments

and restated as a series of alternatives. After due policy consideration at both provincial and regional levels, the best set of alternatives will be suggested as the Midwestern Region's operating plan for its future development. These will then be submitted to the people of the Region for their comments and suggestions.

Aggregate Performance

The "Aggregate Performance Areas, by County" map, indicates how the Midwestern Ontario Region and its four counties as well as the nine other regions and their constituent counties perform in relation to the Province as a whole. This map was derived from a detailed trend assessment of some 63 key social and economic indicators, thus presenting a picture of the socio-economic health of the Region. These performance indicators included population change, educational attainment, labour force participation, income distribution as well as agricultural, mining, manufacturing, construction, retail, wholesale and service trade activities (see Appendix H).

From the trend assessment, the performance of each indicator, at the smallest geographical unit for which data were available, was compared with a provincial average and then with all 63 indicators to finally derive five levels of performance

DATA SOURCES: 1951 THROUGH 1966



for the entire Province: (1) High
(2) Moderately High
(3) Intermediate (Provincial Average)
(4) Moderately Low
(5) Low

In the Midwestern Region both Waterloo and Wellington counties performed at a moderately high level and were thus above the provincial average; the performance in Huron and Perth counties was intermediate or at the provincial average. On the whole, the Region performed quite well relative to the Province.

Total population change by township between 1951 and 1966 is shown on the following map. In Huron County, except for Colborne, Goderich, Hullett, Tuckersmith and Stephen townships, the other 10 townships show population change below that of the provincial average. The western part of Perth and Wellington counties also show a rate of population growth which was below the provincial average. Only those townships within the "Golden Triangle" (Waterloo, North Dumfries and Guelph) showed a rate of population change which was above the provincial norm.

TOTAL POPULATION, PERCENTAGE CHANGE, BY TOWNSHIPS, 1966 / 1951

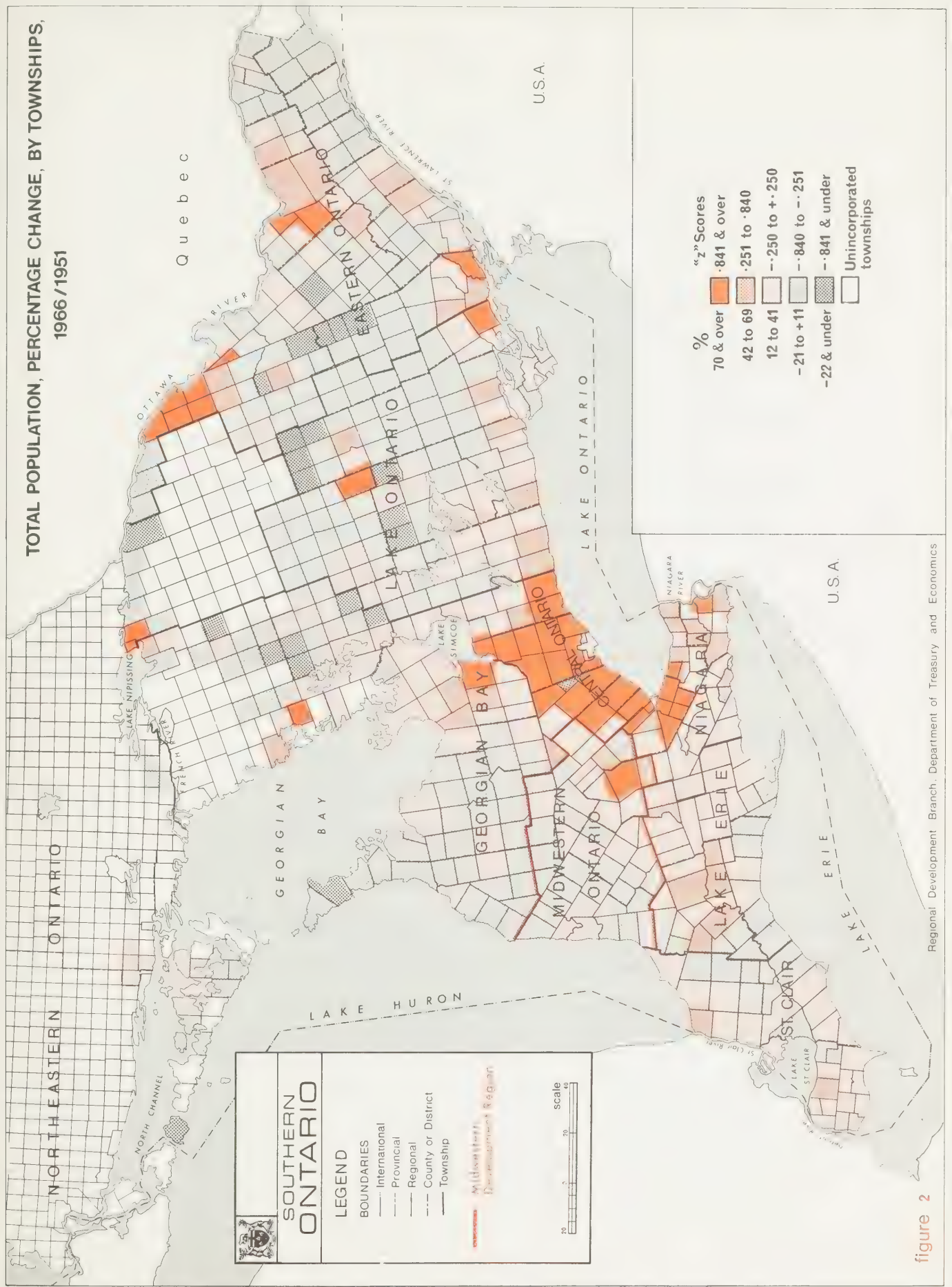


figure 2

CHAPTER II

PHYSICAL AND GEOGRAPHIC SETTING

The Midwestern Ontario Region encompasses an area of 3,670 square miles and includes the four counties of Huron, Perth, Waterloo and Wellington. These contiguous counties lie in the central portion of Southwestern Ontario and extend westwards to the shoreline of Lake Huron. The strategic location of the Region, with its balanced agricultural and industrial economy, offers potential advantages in access to the metropolitan markets of Windsor-Detroit to the west, Toronto-Montreal to the east and New York State, via the Niagara Peninsula, to the southeast.

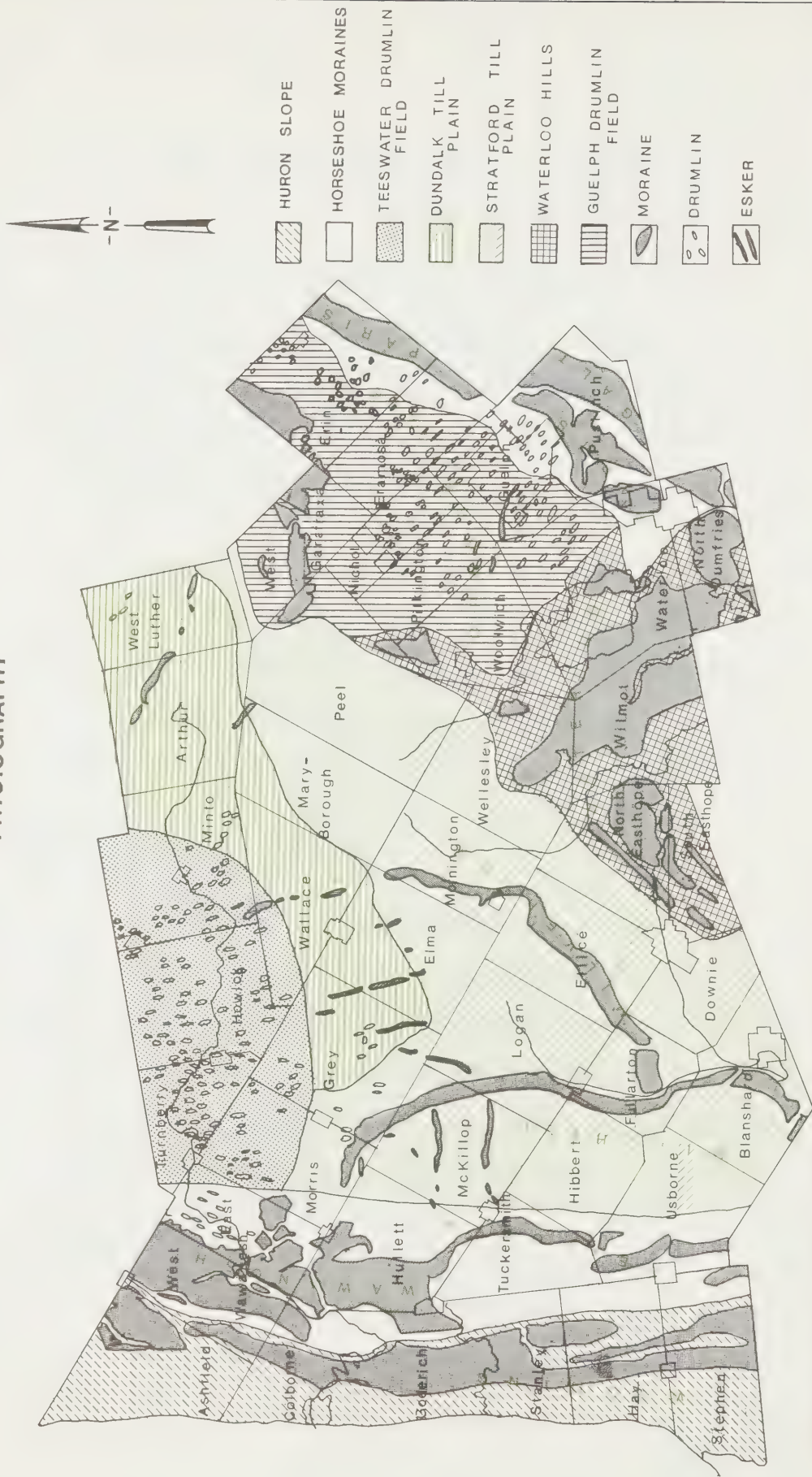
Basic Physiography and Geology

Two major geologic processes have acted on the land to shape the present physical form of the Midwestern Region. The first has been the formation of a bedrock basin which dips slightly southwestwards and influences the courses of the main rivers in the Region. The second has been the extensive effects of continental glaciation which created the younger deposits overlying the bedrock. The physical landscape of the Region today is the result of a combination of these earth shaping processes.

It is possible to divide the Midwestern Region into several broad physiographic regions. (Figure 3).

1. The Horseshoe moraines comprising seven distinct moraines - the Wyoming, Wawanosh, Seaforth, Mitchell, Milverton and Galt and Paris moraines. This group of moraines are characterized by irregular knobs and ridges composed of unsorted glacial debris.
2. The Teeswater Drumlin Field derives its name from the river which drains the greater part of it. Consisting of low hills which are shaped like inverted spoons, it runs in a northwest-southeast direction, indicating former glacial movements. The till here is loamy and has a few large boulders. The low oval hills, with gentle slopes and broad sand and gravel terraces in the depressions between the drumlins, characterize the topography of this area. Drainage under such conditions is good, with the result that the Teeswater Drumlin Field is one of the better general farming districts of Southern Ontario.
3. The Guelph Drumlin Field, which centres upon the City of Guelph, has over 300 drumlins occupying an area of 320 square miles. The Guelph loam is fertile, easily worked and adaptable to many crops, resulting

MIDWESTERN ONTARIO DEVELOPMENT REGION PHYSIOGRAPHY



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: **Chapman and Putnam**, Ontario Research Foundation; Ontario Department of Lands and Forests

Miles 0 4 8 16

figure 3

in a generalized type of agricultural land use.

4. The Huron Slope is mainly a clay and sand plain along the Lake Huron shoreline. Cattle raising is the major agricultural activity.
5. The Dundalk Till area is a gently undulating plain, encompassing the district in which rise the head waters of the Saugeen, Maitland and Grand Rivers. Numerous flat-floored valleys form a network over the plain which is in large part characterized by swamps and poorly drained depressions. The texture of the surface soil is in most cases a silt loam which is slow to dry out and thus prevents early spring work on the land. The Dundalk Till Plain has one of the coolest and shortest growing seasons of any farming area in the Region.
6. The Stratford Till Plain which extends from London in the south to Blyth and Listowel in the north is mainly a broad, flat, clay plain, with only the Mitchell and Milverton moraines breaking the relief.
7. The Waterloo Hills area is dominated by sandy hills or ridges surrounded by till plains. The soil, however, is reasonably fertile and well drained. Nearly two-thirds of the area is used for growing

cereal grains.

The location of these glacial features has significantly influenced the development of the drainage pattern within the Region. The Maitland River provides a good example of the impact of glacial land forms on the course of a river. This river drains an area of 981 square miles lying south of the Saugeen and Lucknow watersheds. While the Maitland River has not been used to any extent for transportation, its mouth provides one of the better harbours for lake boats along the Lake Huron shoreline. The Lucknow River drains an area of 100 square miles most of which is in moraine country. The North Thames, which eventually flows into Lake St. Clair, originates in the large flat areas of Logan Township, while the Avon River, which flows through Stratford, joins the North Thames at St. Marys.

The Grand River, with its tributaries the Conestogo, the Speed and the Nith rivers, is the most important drainage basin of the Midwestern Ontario Region. The headwaters of the Conestogo and Nith intermingle with those of the Maitland and North Thames, the divide between them being indistinct in many places. Entering the Grand from the east at Preston, the Speed River drains the drumlin field west of the Paris Moraine. The Eromosa River, a main branch of the Speed, flows along the front of the Paris Moraine above Guelph. It has the most reliable flow of all the tributaries of the Grand because of the great interdrumlin gravel

beds and swampy valleys which it drains.

With respect to watershed resources management, the Midwestern Region is within the jurisdiction of eight Conservation Authorities. Five of these (Ausable River, Grand River, Maitland Valley, Saugeen Valley and the Upper Thames Region Conservation Authorities) are of major significance to the Region, while the remaining three (Credit Valley, Halton Region and Hamilton Region Conservation Authorities) marginally serve the far eastern part of the Region. No Conservation Authority exists on the shorelines of Lake Huron in the Midwestern Region, except for the limited area under the Maitland Valley Conservation Authority.

Climate

The climate of the Region is satisfactory for general farm crops, and is not too cold for winter wheat. Further, the growing season is long enough to permit the growth of most commercial crops. Although the land in some places may be too wet to work in the early spring, the rainfall is in general well distributed throughout the year, with favourable weather conditions normally prevailing during harvest time.

Latitude, altitude and proximity to bodies of water are the main factors which determine the climate in the Region. Along the shores of Lake Huron, in areas below the 800 foot contour line, the mean annual precipitation is 28 to 30 inches while in

other parts it averages 32 to 38 inches. In the shoreline area, the growing season is longer than farther inland, the relevant figures being 196 to 200 days and 186 to 196 days, respectively. The Midwestern Region is well known for its heavy snowfall which becomes more pronounced in the eastern sector of Huron and the western part of Perth County. Snowfall also tends to change with latitude, becoming heavier towards the north. For instance, average annual snowfall at Guelph amounts to about 50 inches but at Mount Forest exceeds 90 inches.

Climate, soil and vegetation are closely interrelated, as temperature and moisture content exert a significant influence on soil development and plant growth. The original vegetative cover of Southern Ontario was a dense forest, all of which was removed during the period of early settlement, with the result that, today, there are only a few townships where the area under wood comprises even 10 per cent of the total.

Major Resources

Although the Region, for the most part, is well adapted to agricultural use because of the excellent physiographic conditions, industrial activity has attained a high level in the Kitchener-Waterloo area. The flat floors of old glacial deposits have done much to encourage the establishment of industrial sites in Guelph, Stratford and Galt. The furniture industry, in part-

icular, is active in Stratford as well as in Kitchener and dates back to the early days when native woods were used in the manufacture of wood products.

This section briefly examines the major physical resources of Midwestern Ontario as they affect the development of the Region.

Agricultural Resources The Midwestern Ontario Region lies in the heart of a productive agricultural area in Southwestern Ontario. Loamy soils, an equable climate and a generally rolling terrain have encouraged agricultural activity from the early days of settlement. The Region has since developed as one of the outstanding mixed farming areas of Ontario.

Midwestern Ontario produces some 41 per cent of Ontario's mixed grain, over 50 per cent of its dry beans, and over 12 per cent of its buckwheat and tame hay. On a national scale, the Region is also a significant agricultural producer accounting for some 11 per cent of all poultry and eggs sold from Canadian farms and over 10 per cent of the livestock. The Regional also grows more than 15 per cent of Canada's fodder corn, over nine per cent of the oats and over eight per cent of the nation's shelled corn. In addition the Region has become increasingly important in the production of swine and turkeys.

The Midwestern Region is well endowed with good agricultural land; in fact, it contains 24 per cent of the Class I

agricultural land in the Province of Ontario. Farm income generated in the Region is one of the highest in the Province, partially reflecting the fertility of the soil and its proximity to markets.

Although it is recognized that the agricultural sector is an important component of the Region's economic base, there is a need to determine the total demand for the Region's agricultural land in terms of an objective long-range assessment of provincial and national food requirements and trade policy. Knowing how much of the Region's land will be needed for agriculture in the future is particularly important in reallocating land to alternative urban uses, particularly in the Kitchener-Waterloo and Stratford areas.

Recreational Resources The Lake Huron shoreline offers the most extensive recreational areas. The Goderich and Grand Bend districts are especially popular vacation areas with beach resources which appeal to both residents and tourists. Cottages are located along most of the shoreline but some additional development could take place inland. Other cottage developments are found along the inland kettle lakes, quarries, and lakes created by Conservation Authority dams. Belwood and Conestogo Lakes, for example, cater mostly to cottage owners while smaller Conservation areas are available to the public. The practice of locating cottages around Conservation Authority reservoirs is one which is being discouraged at the present time.

The Midwestern Region is well endowed with recreational open space; specifically, the Point Farms Provincial Park in Huron County, 28 conservation areas and numerous municipal parks. In addition there are some ski areas, such as in the Chicopee Conservation area (east of Kitchener), the Minto-Glen Ski Resort near Harriston and the Ski Hill near Shakespeare, which meet local demand.

Mineral Resources In 1966, almost 40 per cent of the Province's salt production and 22 per cent of the total output of cement originated from the Midwestern Ontario Region. The production of salt is centred in the Goderich area.

In the structural materials category, limestone, and sand and gravel are the most important minerals. Limestone beds are found in ample supply in the St. Marys area and are used in the production of cement. Although sand and gravel deposits are widespread throughout the Region, there are certain areas of concentration such as in North Dumfries and Puslinch townships.

As the sources of high-grade deposits of sand and gravel have become depleted near the larger metropolitan centres of Southern Ontario, the Midwestern Region has become one of the major suppliers.

Regional Water Supply Currently, the Midwestern Ontario

Region is self-sufficient with regard to water, but future needs will be determined by the scale and location of urban growth within the Region. Dr. Stewart Fyfe in his recently published Waterloo Area Local Government Review makes direct reference to Waterloo County, but his statement that future needs do vary ... "depending upon whether one is discussing some of the outlying rural areas or the urban parts"¹ ... does have regional implications as well.

At present, a high percentage of Midwestern Ontario's water supply comes from ground water sources such as artesian wells and aquifers. The other major source of water is supplied from Lake Huron, serving those communities located in close proximity to the lakeshore. The Ontario Water Resources Commission, the Waterloo Area Local Government Review, and various municipal bodies within the Region have expressed deep concern about future supplies. The general concensus appears to be that the outlying rural areas can continue to depend on ground water as the reserves are sufficient for the foreseeable future. However, in the major urban concentrations, within Waterloo and Wellington counties, the present ground-water supplies will not be adequate to meet the continued rapid population growth that is expected. Alternative sources of water will, therefore, be required in the future to augment existing ground water sources.

¹Fyfe, S. and R. M. Farrow, Waterloo Area Local Government Review, Report of Findings and Recommendations, February, 1970. p. 41.

Present Land Use Figure 4 (enclosed in the back pocket) shows the generalized land use pattern of the Midwestern Ontario Region. Eight categories have been distinguished: residential, commerce and industry, forestry, agriculture, recreation, extractive industries, large institutional holdings and airports. These land use categories were initially mapped on a scale of 1:50,000 and then generalized into the present map of 1:250,000.

The southern and southeastern portions of the Region contain the greatest amount of urban built up land, including the "Golden Triangle" and the Stratford-St. Marys area.

The Region is basically rural since most of the land is in agricultural holdings or in dispersed small woodlots. Many hamlets throughout the Region serve the needs of the rural community.

There are several deposits of limestone, sand and gravel in the Region but the concentration is adjacent to the major urban built up areas.

Recreational land is primarily found along the Lake Huron shoreline with Conservation Authority areas and other open space being generally near and around major urban centres and within easy commuting range.

Chapter VI presents the land use and its capability in further detail.

CHAPTER III

SOCIAL AND ECONOMIC CHARACTERISTICS

Summary

1. Population

- (a) Since 1961 the rate of population growth in the Midwestern Ontario Region has been one of the highest of the ten regions of the Province.
- (b) In 1966, 73 per cent of the people in the Region were living in urban centres, with 54 per cent living in what is commonly referred to as the "Golden Triangle" comprising the major urban complexes of Kitchener-Waterloo, Galt-Preston-Hespeler and Guelph.
- (c) There has been a noticeable rural to urban shift in population. This has resulted in a net migration loss of people in the more rural counties of Huron and Perth.
- (d) As in the Province generally, the largest percentage change in age group distribution since 1951 has occurred in the younger age group, between 5 and 19 years of age.
- (e) In Huron and Perth counties, particularly the former, there have been proportionate declines in the young age groups, reflecting out-migration.
- (f) Between 1951 and 1966, over 86 per cent of the

total population growth in Midwestern Ontario has occurred in the urban centres of the "Golden Triangle".

2. Labour Force

- (a) Between 1951 and 1961, there was a 20 per cent increase in the labour force of the Midwestern Region, to a total of more than 146,000 persons.
- (b) The most obvious change during this decade was the 11 per cent decline in the agricultural labour force.
- (c) The Region showed a stronger leaning to agriculture and manufacturing than the Province generally, indicative of the diversified economic base in the Midwestern Region. Manufacturing is concentrated in the "Golden Triangle", and agriculture in Huron and Perth counties.
- (d) The Midwestern Region lagged behind the Province in the provision of services in 1961. This is most probably a reflection of the developing nature of the Region during this period of time.
- (e) The labour force participation rate of 58 per cent in 1961 was slightly above the provincial average.
- (f) Huron County had the highest male participation

rates in the younger as well as older age groups, indicative perhaps of the out-migration of male workers between the ages of 25 and 64. On the other hand, Waterloo County had the highest male participation rates in the 25 to 64 age groups, the working age group.

- (g) Generally, the higher the degree of urbanization and the extent of manufacturing activity, the higher is the female labour participation rate. The two most agricultural counties of Huron and Perth have the lowest female labour participation rates, with the lowest being in the former.

3. Income

- (a) Income in the Midwestern Ontario Region, is generally below that of other regions in the Province.
- (b) In 1957, labour income per capita in the Midwestern Region was \$436 less than the provincial average. By 1967, the gap had increased to \$684. However, the major urban centres all show per capita incomes above the provincial average.

4. Education

- (a) The level of educational attainment in the Mid-

western Region has shown considerable improvement since 1961, but still lags behind the provincial norm.

- (b) In terms of the proportion of students completing secondary school education from 1962 to 1966, the Region generally approximates or is above the provincial average. However, while the more urbanized counties of Waterloo and Wellington had a survival rate above the provincial average, Huron and Perth counties were below.
- (c) Student/teacher ratios are less favourable than those found in the Province generally. Perth and Wellington counties have the poorest student/teacher ratios in both elementary and secondary schools. Waterloo County has the best ratio, but still lags behind the provincial average.
- (d) The more rural areas appear to be achieving lower levels of educational attainment.

5. Health

- (a) The Region has fewer dentists per capita than in the Province. The problem is most acute in Huron and Perth counties.
- (b) The Region has fewer doctors per capita than in the Province generally. This is most acute in Huron County.

- (c) In 1966, Waterloo and Huron counties were below the standard requirements for hospital beds per 1,000 population. In Huron County this resulted from the lack of chronic and convalescent beds. In Waterloo County, a major addition to the Kitchener-Waterloo Hospital in 1969 has assisted in meeting provincial standards.

6. Public Safety

- (a) The level of public safety in the Region, measured in terms of the incidence of accidents, crime and fires, is fairly satisfactory compared to the Province as a whole.
- (b) The rates of occupational and other accidents, recreational accidents, number of reported crimes, number of police per 100,000 population and average number of fires in the Midwestern Region were all below the provincial norm.
- (c) The rate of traffic fatalities, the number of police per reported crime, damage to property by fire and death by fire were all above the provincial average.

7. Recreation

- (a) The Region does not have a particularly unique

physical landscape to allow a highly developed recreational industry, yet one of the Region's strong points is its accessibility. It is within the day and weekend trip zone of people in the northern United States and the highly urbanized sections of Southern Ontario and is well serviced by roads.

- (b) The provision of developed opened space (supply) in the Region, for the people of the Region (demand) seems inadequate at present.
- (c) A more extensive system of recreation and conservation areas along the Lake Huron shoreline and the river valleys, could be developed as major tourist attractions.
- (d) A large percentage of the people in the "Golden Triangle" travel to other regions for their weekend recreation, both summer and winter.
- (e) Tourism, which could form a substantial part of the economic base for large sections of the Region, has not been adequately developed. In addition to water-oriented potential numerous latent attractions exist - particularly of an historical and cultural nature.

Population Characteristics

Midwestern Ontario, with a land area of 3,670 square miles, had a total population of 425,775 people in 1966. While its land area constitutes slightly more than one per cent of the total area of the Province, its share of Ontario's population was six per cent. During the period 1961 to 1966, the Region experienced a population growth rate consistently above the provincial average.

Table 3.1

Population of the Regions
of Ontario, 1966, and Rates of Change,
1951-1966, 1961-1966

Region	Population 1966	Percentage Change		Rank
		1951-1966	1961-1966	
Central Ontario	2,501,958	83.5	19.9	1
Eastern Ontario	850,923	43.8	8.7	4
Niagara	840,181	45.9	10.2	3
Northeastern Ontario	516,228	39.6	2.1	10
Lake St. Clair	485,564	30.8	8.0	6
Lake Erie	437,911	37.2	8.1	5
Midwestern Ontario	425,775	44.4	14.2	2
Lake Ontario	350,903	29.2	4.7	7
Georgian Bay	327,943	19.9	2.9	9
Northwestern Ontario	223,484	34.1	3.2	8
Province of Ontario	6,960,870	51.4	11.6	

Source: Dominion Bureau of Statistics, Census of Canada, Population, 1966

Population growth in the Midwestern Region has been relatively greater than that experienced in all but one of the

other nine regions since 1961. The increase, however, has not been uniform throughout the Region, as can be seen from Table 3.2. Most of the population growth has taken place in Waterloo County, which in 1966 accounted for more than 50 per cent of the total population. Perth and Huron counties, particularly the latter, recorded only minor increases.

Table 3.2

Population of the Counties of
the Midwestern Ontario Region, 1966,
and Rates of Change, 1951-1966, 1961-1966

<u>County</u>	<u>Population</u> <u>1966</u>	<u>Percentage Change</u>	
		<u>1951-1966</u>	<u>1961-1966</u>
Huron	54,446	10.5	1.2
Perth	60,424	14.9	5.2
Waterloo	216,728	71.8	22.6
Wellington	94,177	40.7	11.2
Midwestern Region	425,775	44.4	14.2
Province of Ontario	6,960,870	51.4	11.6

Source: Dominion Bureau of Statistics, Census of Canada, Population, 1966.

The township distribution of population further emphasizes the pattern of population concentration in the Midwestern Region. The most populous townships are those which surround the largest urban areas. These townships are inhabited by a high proportion of non-farm people who logically should be considered as "urban residents."

The townships comprising Waterloo County reflect this pattern; two townships in Huron County (Stephen and Tuckersmith) also display high population concentration. The rural farm densities in these latter two townships are quite low, suggesting that the concentrations may further be explained by the existence of Centralia and Clinton air bases in these townships.¹

This concentration of total population towards urban areas may also be discerned from spatial variations of population densities by townships (Figure 5). From the urban centres in Waterloo County, population densities decline rapidly to the west and north-west. Waterloo County had a population density of 420 people per square mile in 1966; Wellington, 92; Perth, 72; and Huron County, 42. For the Region generally, the population density was 116 people per square mile compared to 20 per square mile for the Province and 325 people per square mile in Central and Southwestern Ontario.

In summary, it would appear that there is a tendency for the population of the Midwestern Ontario Region to move towards urban areas.

Urban and Rural Distributions The Midwestern Region is less urbanized than is the Province of Ontario generally. In 1966, 73 per cent of the Region's people were living in urban centres compared to over 80 per cent in the Province. However,

¹The Centralia base has been deactivated since 1966. The Clinton base is scheduled for deactivation by 1971.

MIDWESTERN ONTARIO DEVELOPMENT REGION DENSITY OF POPULATION BY TOWNSHIPS AND INCORPORATED CENTRES OVER 2500, 1966



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
 Source: Dominion Bureau of Statistics, Census of Canada Population, 1966

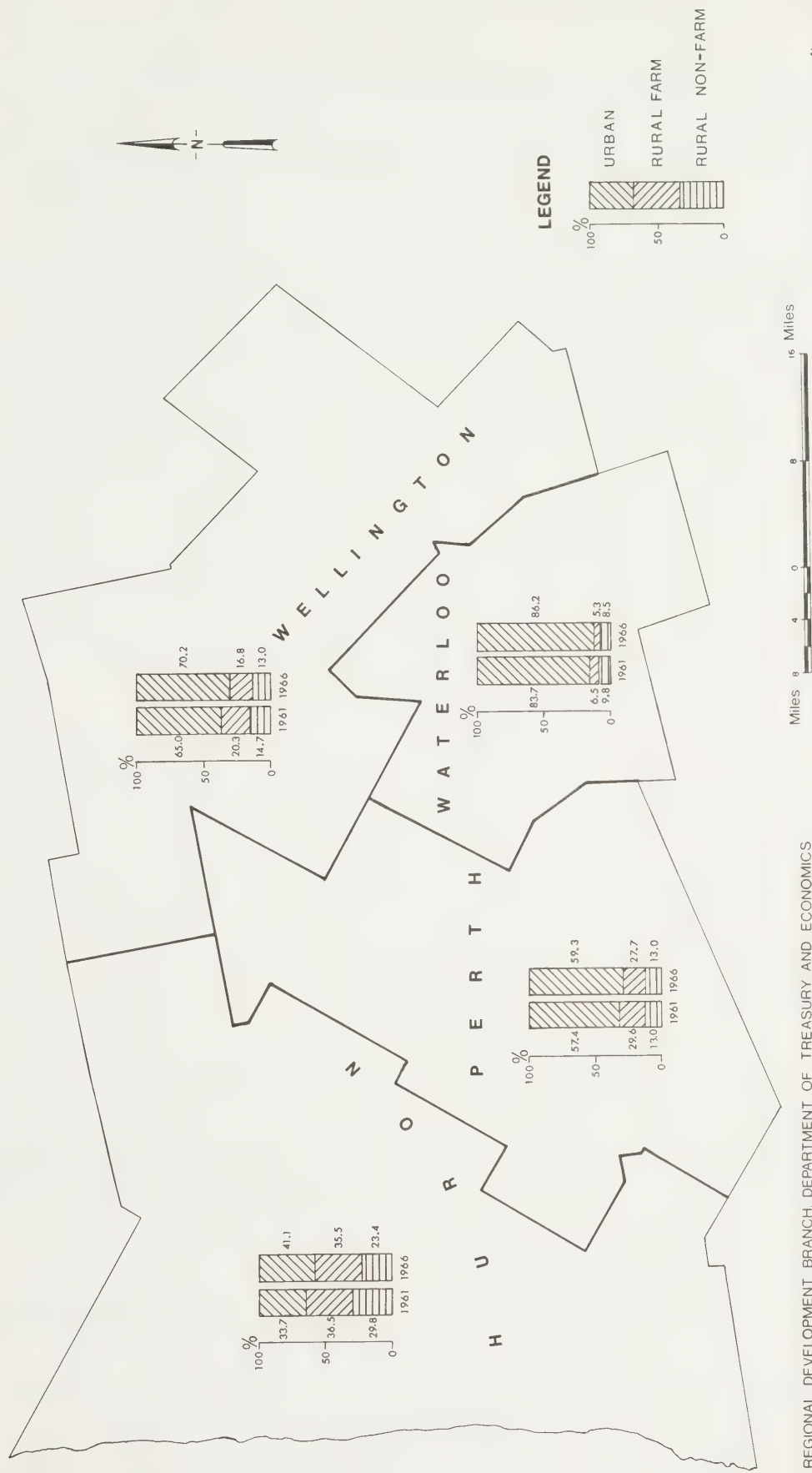
the change in the number of people living in urbanized areas between 1961 and 1966, was greater in the Region (22 per cent) than in the Province (16 per cent).

At the county level, there are marked variations in the degree of urbanization. The most urbanized counties are Waterloo and Wellington, largely because of the communities comprising the "Golden Triangle". Only Waterloo County has a greater percentage of people living in urbanized areas than has the Province as a whole.

The relative county shares of rural population are approximately the same, with Huron and Perth being the more rural. The most urbanized county (Waterloo) gained the largest number of rural people (1,035 between 1961 and 1966), while the most rural county (Huron) lost the largest number of rural people to urban centres (3,599). The rapidity of the urbanization process, land annexations by urban centres and farm consolidation may very well account for the great losses in rural population in Huron County, but the paradox of Waterloo County needs to be investigated in the light of the components of rural population, i.e. rural farm and rural non-farm categories.

In both 1961 and 1966, Huron County had the highest proportion of farm population in the Region, followed by Wellington, Perth and Waterloo counties (see Figure 6). All counties in the Region have shown absolute and relative declines in rural

MIDWESTERN ONTARIO DEVELOPMENT REGION PROPORTION OF URBAN, RURAL FARM & RURAL NON-FARM POPULATION BY COUNTY 1961 and 1966



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966

farm population over the five years, but only Wellington County had a decline which was greater than the provincial average.

In 1961, the highest proportions of rural non-farm population were observed in Waterloo County (32.4 per cent) and paradoxically, Huron County (30.2 per cent) which also had the greatest concentration of farm population. One may suggest that large concentrations of rural non-farm population are related to (1) suburban growth and commuting from rural townships in areas with large urban centres (as in Waterloo County); (2) the existence of large numbers of unincorporated farm centres, the population of which will be enumerated as rural non-farm; and (3) the existence of the military bases in Huron County.

The percentage change in rural non-farm population between 1961 and 1966 shows some modifications of earlier patterns. Waterloo County increased its share of rural non-farm population by 6.5 per cent while in Huron County this group declined by 20.4 per cent. Over the five-year period, there was a general decline of 2.3 per cent in Ontario's rural non-farm population. The divergencies of this pattern might be explained by the growth of commuting non-farm rural population in highly urbanized counties (like Waterloo). That is, an urban to rural migration is generated by people who continue to work in the cities but prefer to live in a rural environment. On the other hand, Huron County

is experiencing a rapid rural to urban migration whereby people are leaving smaller centres to go to the larger urban areas.

Migration Patterns The spatial distribution of population can be further visualized from net migration statistics.¹ Population movements in the Midwestern Region are shown in Table 3.3.

Table 3.3

Natural Population Increase and Net Migration
By County, Midwestern Ontario Region and the Province of Ontario
1951-1961, 1961-1966

County	1951-1961		1961-1966	
	Natural Increase %	Net Migration %	Natural Increase %	Net Migration %
Huron	14.3	-5.1	5.1	-3.9
Perth	12.6	-3.3	5.5	-0.3
Waterloo	21.8	18.4	9.3	13.3
Wellington	17.2	9.4	7.0	4.2
Midwestern Ontario	17.8	8.5	7.6	6.7
Province of Ontario	20.7	14.9	7.8	3.8

Source: Dominion Bureau of Statistics, Census of Canada, Population, 1966.

From these statistics, it is apparent that:

¹There are three components to population change: births, deaths and net migration. Natural increase is the number of births minus the number of deaths. Net migration is the difference between expected population on the basis of natural increase, and the actual population. Immigration has occurred when total population growth is greater than natural increase; emigration occurs when the total population growth is less than natural increase.

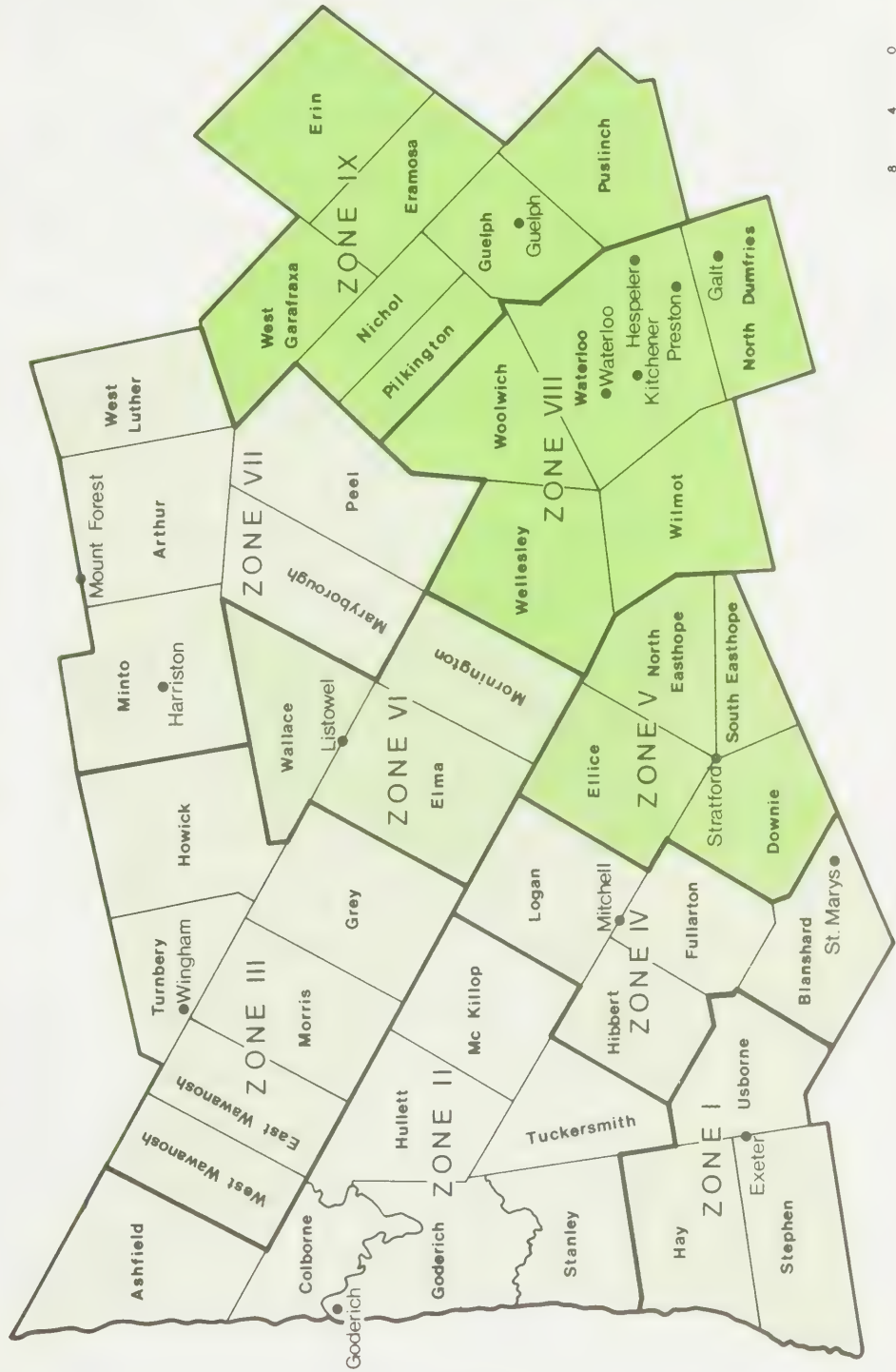
- (1) Both Huron and Perth counties are experiencing out-migration although the rate loss is more severe in the former, where a net loss of over 2,100 persons occurred between 1961 and 1966.
- (2) Net immigration is most pronounced in Waterloo County, and to a lesser degree in Wellington County.

Migration patterns were also studied at lower levels of aggregation, by age groups, during the 1951-1966 period. The Region was separated into nine zones based on journey-to-work patterns. These zones were adjusted to relate to township boundaries as shown on Figure 7. General comments regarding the migration patterns of each zone follow:

- Zone I - Out-migration was particularly severe in the 1951-1961 period, but has since been reduced considerably.
- Zone II - Out-migration was the highest in the Midwestern Region during the 1961-1966 period. The major age groups affected were those between the ages of 20 through 34. The out-migration process from this zone did not begin in any magnitude until the 1960's.
- Zone III - Out-migration has been fairly consistent from 1951 to the present. People between the ages of 20 through 24 made up the major component involved in migrating from the area during the 1961-1966 period.
- Zone IV - Out-migration increased in this area during the

MIDWESTERN ONTARIO DEVELOPMENT REGION

ESTIMATED MIGRATION BY JOURNEY-TO-WORK ZONES 1991-1995



1960's. Again the major age groups affected were the younger people who generally comprise the major proportion of the labour force; that is, those people between the ages of 20 and 34.

- Zone V - While this zone experienced out-migration during the 1951-1961 period, the five-year period of 1961-1966 has been more favourable, showing some degree of in-migration, particularly in the 35 through 44 age group.
- Zone VI - After experiencing out-migration during the 1951-1961 period, the zone now shows signs of stability.
- Zone VII - The northwestern part of Wellington County has shown consistent rates of out-migration since 1951. In particular the zone is losing people in the 15 to 24 age group. It is of interest to observe that while there has been considerable overall out-migration from the zone, there has also been an in-migration of people between the ages of 35 and 44 during the 1961-1966 period.
- Zone VIII - While in-migration was considerable during the 1951-1961 period, it has boubled during 1961-1966. This zone dominates the population structure of the Midwestern Region and it is possible that out-migration from other zones may well be filtering into this one.

Zone IX - Centred on the city of Guelph, this zone has also been experiencing in-migration since 1951, but of magnitudes considerably below those in zone VIII, Waterloo County. The extent of in-migration has increased only slightly in the 1961-1966 period when compared with the 1951-1961 decade. The largest gains are to be found in the 15 to 19 and the 35 to 44 age groups.

In summary, the migration statistics confirm what has already been described i.e. the increasing concentration of population in the area of the "Golden Triangle" and the rural to urban shifts.

Age Distribution From 1961 to 1966, the age composition of the population of the Midwestern Ontario Region was reasonably consistent with the provincial pattern. Significantly, the percentage of the population in the 15 to 64 age group (i.e. the labour force) was also in consonance with the provincial share.

The largest percentage increase since 1961 has occurred in the younger age group, between 5 to 19 years of age, presumably reflecting the post-war baby boom. The same trend is also evident for the Province generally, as well as for the individual counties of the Midwestern Region.

On a county basis, there are distinct differences in the shares of the population in the older age groups. In 1966, Waterloo and Wellington counties, for instance, had 7.4 and 10.0 per cent of their populations in the over 65 age group. Huron and Perth counties, on the other hand, had slightly over 11 per cent of their populations in this age group.

In Huron and Perth counties there were decreases in the younger age group (0-4). Huron County had the largest decrease (10.8 per cent from 1961 to 1966), while Perth County had a lower decrease (0.2 percent during this period). Huron County also exhibited a decrease of 4.0 per cent in the 20 to 44 age group. From the previous analysis, it has been demonstrated that the largest exodus of people has been from Huron and Perth counties. Presumably they involved the major childbearing age groups (notice the decline in the 20-44 age group by 4.0 per cent) and the most active participants in the labour force.

In summary, the following conclusions can be drawn.

- The most populated and urbanized counties have had the largest population increases in all age groups. Conversely, the least densely settled and the most agricultural counties have had the smallest changes in population.
- For all counties, the largest increases in population

have taken place in the 15-19 age group.

- County differences in age distribution have remained relatively constant over the 1961-1966 period.
- In Huron County, the younger people are migrating to other areas, leaving behind an older population.

Communities in the Midwestern Region In 1966, approximately 54 per cent of the population of the Midwestern Ontario Region was concentrated in what is commonly referred to as the "Golden Triangle". This includes the Kitchener-Waterloo, Galt-Preston-Hespeler and Geulph complexes. In 1951 only 39 per cent of the population was concentrated in these centres. Over 86 per cent of the total population growth in the Midwestern Region between 1951 and 1966 occurred in the urban centres of the "Golden Triangle".

Table 3.4 summarizes the variations in the rate of change among urban centres for the 1951-1966 period. With the exception of Erin, which had a small population base in 1951 and whose population was only 1,195 in 1966, the centres which had the greatest change in population were those within the "Golden Triangle" and its environs. Conversely, the centres with smaller population growth were those located in the areas of out-migration described previously.

Table 3.4

Centres in Midwestern Ontario with Populations
Exceeding 1,000 persons in 1966

<u>Centre</u>		<u>Population</u> <u>1966</u>	<u>Percentage Change</u> <u>1951-1966</u> <u>1961-1966</u>		<u>Rank of Centre</u> <u>1951-1966</u> <u>1961-1966</u>	
Kitchener-Waterloo		123,144	116.6	28.5		
Galt-Preston-Hespeler		52,252	70.3	19.0		
Kitchener	1	93,255	107.8	25.2	2	4
Guelph	2	51,377	87.6	29.0	3	2
Galt	3	33,491	74.4	20.3	7	6
Waterloo	4	29,889	149.3	39.9	1	1
Stratford	5	23,068	22.8	12.7	17	12
Preston	6	13,380	75.6	15.6	6	9
Goderich	7	6,710	36.0	4.7	11	22
Hespeler	8	5,381	39.3	19.1	10	7
St. Marys	9	4,750	18.9	6.0	21	18
Listowel	10	4,526	30.5	13.1	12	11
Fergus	11	4,376	29.2	14.2	13	10
Elmira	12	4,047	56.3	21.3	8	5
Clinton	13	3,280	28.8	-6.0	14	27
Exeter	14	3,226	26.7	5.9	15	19
Wingham	15	2,974	12.6	1.8	24	24
Mount Forest	16	2,859	24.8	9.0	16	16
New Hamburg	17	2,438	40.3	11.8	9	13
Mitchell	18	2,371	19.8	5.5	20	20
Seaforth	19	2,241	5.8	-0.6	26	26
Bridgeport	20	2,111	85.7	26.3	4	3
Harriston	21	1,748	17.0	7.2	22	17
Elora	22	1,644	22.0	10.6	18	15
Palmerston	23	1,631	3.7	5.0	27	21
Arthur	24	1,242	14.2	3.5	23	23
Erin	25	1,195	83.8	18.9	5	8
Ayr	26	1,134	21.8	11.6	19	14
Milverton	27	1,122	6.4	1.0	25	25

Source: Dominion Bureau of Statistics, Census of Canada, Population, 1966.

From a population viewpoint, the Midwestern Region is dominated by the centres of the "Golden Triangle" and those centres which are within close proximity to Highway 401 and Metropolitan Toronto. There are, as well, a few centres outside the "Golden Triangle" that have shown relatively greater population

growth during the 1961-1966 period than during the previous decade. These include in particular the Stratford-St. Marys area, and centres just outside the major urban cores, such as Elmira and Fergus.

The relative rank of centres in Huron County declined during the 1961-1966 period, with Clinton and Seaforth actually registering population losses.

The spatial distribution and trends of population in the Midwestern Ontario Region are apparent. Population continues to concentrate in the "Golden Triangle", with Stratford being the only other centre of moderate size. The remainder of the Region consists of a scattering of smaller centres along the existing highway networks serving basically agricultural areas.

Labour Force

The labour force includes all persons, 15 years of age and over, who have a job or are looking for work. The latest available labour force data on a county basis are for the census year 1961. This section reviews labour force characteristics and their changes during the 1951-1961 decade. Later in the report, when an analysis of the economic sectors is undertaken, more recent employment estimates will be discussed.

Composition by Industry Divisions The total labour force in the Midwestern Ontario Region in 1961 was 146,289 persons, a 20 per cent increase during the 1951-1961 decade. This was a smaller increase than for the Province generally (27 per cent). The most apparent change was the decline in the agricultural labour force (11 per cent), although this was less than the 16.2 per cent decrease for the Province. The growth of the Region's labour force in the secondary and tertiary activities, however, kept pace with the increases for the Province. Significant differences can be observed in the various counties (See Table 13 of the Statistical Appendix).

Huron County While Table 13 of the Statistical Appendix shows the labour force by industry divisions and the percentage changes from 1951 to 1961, Table 3.5 shows the distributive share of the labour force for each county as a percentage of the total

TABLE 3.5

SHARE OF LABOUR FORCE BY INDUSTRY DIVISIONS, 1951 AND 1961

	County Share of Regional Labour Force						Regional Share of Provincial Labour Force	
	Huron		Perth		Waterloo			
	1951 %	1961 %	1951 %	1961 %	1951 %	1961 %	1951 %	1961 %
Agriculture	32.6	31.8	25.7	26.1	16.4	17.6	25.3	24.6
Forestry	16.9	30.5	23.1	23.7	29.2	25.4	30.8	20.3
Fishing & Trapping	89.5	100.0	-	-	5.3	-	5.3	-
Mining, Quarries & Oil	14.3	52.0	14.3	7.2	32.7	17.2	38.8	23.6
Manufacturing	4.5	4.7	12.4	11.1	63.5	64.7	19.6	19.6
Construction	15.5	11.5	16.5	13.1	47.2	54.0	20.8	21.4
Transportation, Com- munications & Other Utilities	12.8	14.6	23.1	22.3	40.9	42.6	23.2	20.5
Trade	13.3	11.1	17.8	14.4	47.0	54.0	21.9	20.6
Finance, Insurance & Real Estate	7.5	7.1	12.2	10.4	64.8	66.7	15.5	15.8
Services, Public Ad- ministration & Defense	23.7	17.9	13.8	12.4	37.8	43.9	24.6	25.8
Industry not Stated	33.2	11.5	16.0	17.0	30.2	46.4	20.6	25.2
All Industries	15.4	13.6	16.7	14.8	46.0	49.7	21.9	21.9
							5.2	5.0
							5.0	4.7
							5.0	4.4
							6.5	6.1

Source: Regional Development Branch, Department of Treasury & Economics, Compiled from Dominion Bureau of Statistics, Census of Canada Labour Force, 1961.

regional labour force for 1951 and 1961.

The major employer in Huron County is agriculture. Although the actual number in the labour force in this sector declined by more than 13 per cent from 1951 to 1961, the share of agricultural labour has remained relatively constant. This would suggest that there has been a relative decline in this sector in all four counties of the Midwestern Region.

In other primary industries, Huron County displays considerable percentage gains, although in numbers, the labour force is small. The most significant increase is in salt mining where the labour force increased from 14 to 181 workers.

Although there has been a 9.1 per cent increase in Huron County's manufacturing labour force over the 1951-1961 decade, its Regional share has remained constant at 4.5 to 4.7 per cent.

In the tertiary industries, there has been an increase of more than 25 per cent in the labour force between 1951 and 1961. The most significant increases have occurred in the transportation, communications and other utilities and the finance, insurance and real estate sectors. In the wholesale and retail trades, Huron County's share of the regional labour force has declined. This would be consistent with the relatively small population increases in the County.

In summation, there has been a six per cent increase in Huron County's labour force between 1951 and 1961. The increase has been the smallest experienced by any of the four counties of the Midwestern Ontario Region. As a result, the County's share of the regional labour force has decreased from 15.4 per cent in 1951 to 13.6 per cent in 1961.

Perth County The labour force in Perth County increased 6.7 per cent during the 1951-1961 period, a percentage change similar to that of Huron County. However, the composition of the labour force, by industry divisions, shows distinct differences. Unlike Huron County, the major employer in Perth County is the tertiary sector which increased its labour force by 22 per cent from 1951 to 1961. Like Huron County, the most significant increases occurred in the transportation, communication and other utilities and the finance, insurance and real estate sectors. Whereas Huron County showed a distinct decline (42 per cent) in the community, business and personal service industries, Perth County showed an increase of over 24 per cent.

All other sectors showed a decline. The manufacturing sector, the second largest component of the labour force, declined slightly from 1951 to 1961. The primary sector showed a decline in all industry divisions except in mining, quarries and oil where the labour force increased from 14 workers in 1951 to 25 in

1961. The relative and absolute decline in agriculture noted in Huron County is restated in Perth where the decline was over nine per cent during the same time period.

Perth County's share of regional labour force has remained relatively constant at 21.9 per cent. All industry divisions registered declines in regional importance except for agriculture, which increased from 25.7 per cent in 1951 to 26.1 per cent in 1961, forestry (increasing from 23.1 per cent to 23.7 per cent) and the Industry not Stated division which grew from 16 per cent in 1951 to 17 per cent in 1961.

Waterloo County Most of the Region's increases in the labour force have taken place in Waterloo County, where a 29.7 per cent gain occurred between 1951 and 1961. The greatest percentage changes occurred in the trade and services sectors, an increase greater than the provincial average. Excluding primary industries, the County has increased its relative share in all industry divisions, with significant increases again reflected in the trade and services sectors. It would appear that this county is the commercial and service centre of the Midwestern Region. It should be recognized that Waterloo County contains over 50 per cent of the Region's population and consequently commands a higher level of trade and service activity. In 1951, Waterloo County's share of the regional labour force was 46.0 per cent, increasing to 49.7 per cent by 1961.

Wellington County The total labour force in Wellington County increased by 19.7 per cent during the 1951-1961 decade. While the largest decrease was observed in agriculture (13.6 per cent), an even greater increase took place in the trade and services sectors.

The county's share of regional labour force has remained constant at 21.9 per cent. The trade sector has declined in regional importance while the service sector registered a relative increase. Manufacturing has also remained constant at 19.6 per cent of the regional manufacturing labour force.

Major Urban Centres Table 3.6 shows the labour force distribution for selected urban centres in 1961. In all the centres except Goderich, manufacturing activity dominates. Certain characteristics distinguish one centre from another. In Goderich, Stratford and Guelph, the percentage of the labour force engaged in the provision of services is relatively greater than that of the other centres, perhaps indicating that these three places act as higher order centres in the provision of services.

The proportion of the labour force found in the transportation, communications and public utilities sector is considerably larger in Goderich and Stratford than in any other centre in the Region. These two places act as distribution and transportation

TABLE 3.6

LABOUR FORCE DISTRIBUTION FOR SELECTED URBAN CENTRES, 1961

	Goderich		Preston		Stratford		Waterloo		Galt		Guelph		Kitchener	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	20	0.9	27	0.6	50	0.6	60	0.7	105	0.9	108	0.6	209	0.7
Manufacturing	445	19.7	2,577	53.9	2,786	34.2	3,409	39.6	6,276	54.4	6,107	37.6	13,858	42.6
Construction	147	6.5	186	3.9	427	5.2	550	6.4	541	4.7	953	5.9	2,490	7.7
Transportation	247	11.0	251	5.3	1,013	12.4	411	4.8	485	4.2	857	5.3	1,558	4.8
Trade	410	18.2	602	12.6	1,330	16.3	1,395	16.2	1,471	12.7	2,270	14.0	5,471	16.8
Finance	61	2.7	142	3.0	283	3.5	804	9.3	330	2.9	466	2.9	1,700	5.2
Services	475	21.1	766	16.0	1,695	20.8	1,529	17.8	1,730	15.0	4,076	25.1	5,471	16.8
Government	236	10.5	130	2.7	366	4.5	278	3.2	360	3.1	952	5.9	1,111	3.4
Other	214	9.4	98	2.0	204	2.5	177	2.0	248	2.1	441	2.7	645	2.0
Total	2,255	100.0	4,779	100.0	8,154	100.0	8,613	100.0	11,546	100.0	16,230	100.0	32,513	100.0

Source: Compiled from data of the Department of Manpower and Immigration.

centres for their areas.

Finance is, relatively, a larger employer in Waterloo than in the other centres, reflecting the concentration of insurance companies in this city.

Summary Table 3.7 shows the percentage distribution of the 1961 labour force by county, and the Midwestern Ontario Region's position, by industry groups, among the ten Ontario regions.¹ The Midwestern Region has a diversified economic base, ranking third in agricultural and second in manufacturing concentration. At the opposite end of the scale, the Region ranks last in the services and transportation, communications and public utilities sectors.

Agricultural specialization is greatest in Huron County, where it comprised 34 per cent of the labour force in 1961. Manufacturing activity on the other hand, dominates in Waterloo County.

The Region as a whole showed a stronger emphasis on manufacturing and agriculture than did the Province; the first is due

¹The ranking system indicated here can be looked upon as an index of labour force concentration. It represents the ranking of economic areas by the percentage distribution of the labour force in an industrial grouping. For example, assume that there are three regions, A, B, and C. Of the total labour force, region "A" has 20 per cent engaged in manufacturing, region "B" - 30, and region "C" - 25. These regions would, therefore, be ranked as

B - 1

C - 2

A - 3

for the manufacturing sector. This procedure was applied to each sector.

TABLE 3.7

ECONOMIC STRUCTURE, RELATIVE LABOUR FORCE BY MAJOR INDUSTRY GROUPS,
COUNTIES, MIDWESTERN REGION & RANK AMONG ONTARIO REGIONS, 1961

	Agriculture	Forestry	Fishing & Trapping	Mines, Quarries & Oil Wells	Manufacturing	Construction	Transportation, Communications & Other Utilities	Trade-Commerce		Finance, Insurance, Real Estate	Community, Business & Personal Service Industries			Public Administration and Defense	Industry not Stated
								Total	Retail		Total	Personal Services	Public		
Huron	34.0	.1	.2	.9	11.6	5.1	6.0	11.2	9.2	1.8	12.8	4.6	15.0	1.3	
Perth	25.7	.1	-	.1	25.0	5.3	8.3	13.4	10.1	2.4	14.9	5.2	2.9	1.8	
Waterloo	5.2	*	-	.1	43.7	6.6	4.8	15.0	11.3	4.5	15.7	5.7	2.9	1.5	
Wellington	16.4	*	-	.3	30.0	6.0	5.2	13.0	9.8	2.5	20.5	5.2	4.3	1.8	
Midwestern Ontario Region	14.6	*	*	.2	33.6	6.1	5.5	13.8	10.5	3.4	16.3	5.4	4.9	1.6	
Rank relating to other Regions	3	8	3	8	2	8	10	6	7	3	10	10	7	-	
Province of Ontario	7.0	.7	.1	1.8	26.9	6.4	8.2	15.5	11.2	4.1	19.5	6.9	7.6	2.2	

* Less than .05 per cent

Source: Adapted from L. O. Gertler (Study Director), The Concept of a Regional Development Plan, Planning and Resources Institute, University of Waterloo, 1968, Vol. I, Appendix I, Table 5.

primarily to the heavy concentration of manufacturing employment in Waterloo County, or more specifically the "Golden Triangle", and the second to the agricultural nature of Huron and Perth.

Differences among the counties in economic structure are striking, with Huron and Waterloo as diametrical opposites. The first is very much a farming area with only a few industries in its market centres - over 35 per cent of the labour force are in primary resource activities and less than 12 per cent in manufacturing. The second is exceptionally strong in manufacturing with almost 44 per cent of the total county labour force engaged in this sector and only a little more than five per cent in primary resource activities.

In 1961, the Region as a whole ranked last in the share of the labour force in community, business and personal services. Wellington was the only county which had a proportion of its labour force engaged in community, business, and personal services comparable to the provincial average. In retail trade, only Waterloo County, with 11.3 per cent of its labour force in that sector, reached the average for Ontario as a whole.

This general picture on services obscures a very important shift that has been occurring in the Kitchener area, that is, the striking rise of service employment and the corresponding relative decrease in manufacturing employment. Available data

for the City of Kitchener show that the labour force in the entire services group (community, business, personal, trade, transportation, communications and government) increased from 34 per cent in 1941 to 47 per cent of the total in 1961. This shift is indicative of a qualitative change in the life style of the city which reflects a socio-economic and cultural re-orientation plus the emergence of the urban area as a major regional centre.

In transportation and communications - services that are closely related to economic development - all counties lagged behind the provincial norm; the Region's percentage of the labour force in these activities was no more than two-thirds of the provincial ratio.

Perth and Wellington counties present an economic structure or mix somewhere between the two poles of Huron and Waterloo counties. In a sense, three stages of economic evolution are represented within the Midwestern Region with Huron and Perth counties intensively agriculturally oriented and less urbanized; Waterloo County heavily urbanized and industrialized; and Wellington County occupying an intermediate stage.

Differences in economic structure within the Midwestern Region are important because they are reflected in labour participation rates, in educational levels, in degree of urbanization and by implication, in income.

Labour Force Participation Rates The labour force

participation rate shows the proportion of the working age population, defined as 15 years of age and over, that is available for work. It is contingent on the availability of economic opportunities, the social character of the region (e.g. the presence of working mothers) and the predominate aspects of the economic base.

The participation rate in the Midwestern Ontario Region in 1961 was 58.0 per cent, slightly above the provincial average of 56.6 per cent (See Statistical Appendix, Tables 14 and 15). It was consistently above the provincial norm for all age groups.

Within the Region there are marked differences. Huron County, for example, had the highest male participation rates in the 15 to 24 as well as the 65 and over age groups, indicative perhaps of fewer young people in the County (outmigration or lower birth rates) or of comparatively fewer young people remaining in school for further education than in other counties of the Region generally. On the other hand, Waterloo County had the highest male participation rates in the 25 to 64 age group.

A glance at the increased number of women in the labour force from 1941 to 1961 in Ontario (315,000 to 692,000) illustrates just how significant the role of females has become in the economy. Many jobs for women have been created by the rapid expansion in service trade activity, as well as by the increased clerical and

production opportunities in manufacturing. While the average female participation rate in the Region of 33.7 per cent (32.6 per cent in the Province) is relatively small in comparison with an 82.6 per cent rate for males, it must be remembered that in the first decade of the century the provincial female participation rate barely exceeded 10 per cent. Analysis reveals that labour force participation is highest, as would be expected, among younger females between the ages of 15 and 24 (46.8 per cent).

There are marked distinctions in female participation rates among the four counties. Waterloo County leads the Region in all age groups, with a total female participation rate of 37.4 per cent. The largest differences are in the younger age group, 15 to 24, where the participation rate in Waterloo County is 52.7 per cent compared to 35.8 per cent in Huron County. There is a significant statistical relationship between female participation rates and the degree of urbanization and the extent of manufacturing activity. The two more agricultural counties of Huron and Perth have the lowest female labour participation rates, with the lowest being in the former. However, it is important to recognize the economic contribution of working farm wives even though they may not be classified as female labour force.

Income

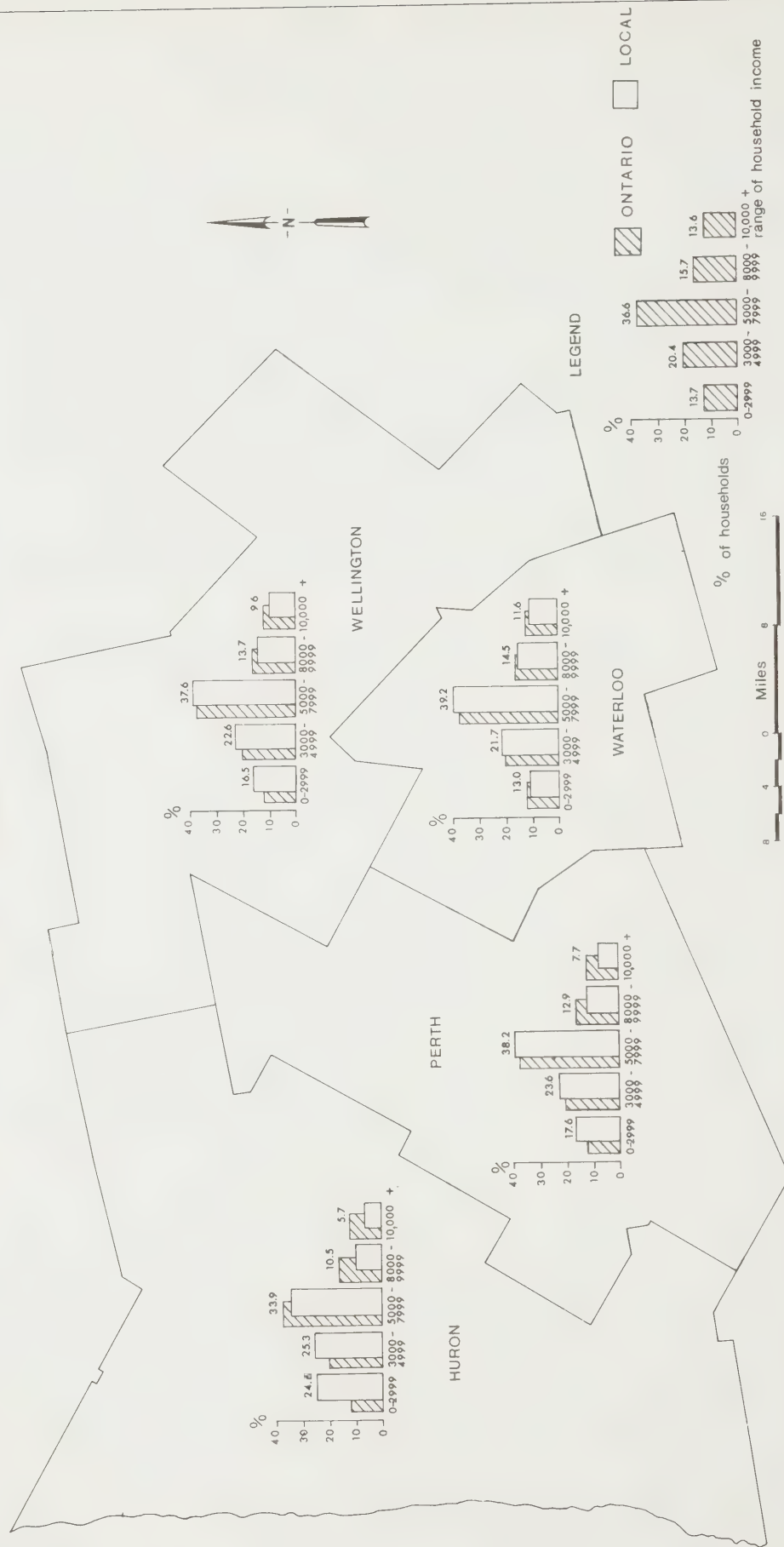
Income in the Midwestern Ontario Region is generally below that of other regions in the Province. For example, the region ranked seventh of the ten regions in total labour income for all years between 1958 and 1966. The fact that wages in the manufacturing sector tend to be lower in the Midwestern Region than in the Province, plus the existence of a large agricultural base, may well account for generally lower incomes in the Region.

Figure 8 shows the 1966 distribution of household income for each county compared with the Province. Huron and Perth had a greater percentage of households in the lower income groups (under \$5,000) and a smaller percentage in the higher income groups. On the other hand, household income in Waterloo County more closely approximated the provincial norm. Significantly, the highest proportion of households were in the income range between \$5,000 to \$7,999 (33.9 per cent in Huron to 39.2 per cent in Waterloo County). Fewer households were in the higher income groups in the Midwestern Region than in the Province generally.

Average wages and salaries in manufacturing were also below the provincial average. Labour income per capita in 1957 was \$436 less than the provincial average. By 1967 the latest year for which data are available the gap increased to \$684.

MIDWESTERN ONTARIO DEVELOPMENT REGION

DISTRIBUTION OF HOUSEHOLD INCOME BY COUNTY COMPARED WITH THE PROVINCE 1966



Source: Sales Management Magazine 1967

REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS

The survey of manufacturers, undertaken by the Regional Development Branch in 1969-1970, showed that the lower wage scales were an added inducement for some industries to choose the Mid-western Region as their location. In the short run, and until such time as the Region may acquire more dynamic and sophisticated manufacturing industries than currently exists, this wage differential may be advantageous to the Region.

All income measures indicate disparities among the four counties of the Region. For example, while all four counties were below the provincial average per capita income in 1966, Waterloo and Wellington approximated the provincial norm, but Huron County was \$468 and Perth County \$289 below it.

On the other hand, the cities of Kitchener, Waterloo, Galt and Guelph all had per capita incomes above the provincial average.

The greatest increases in per capita income from 1961 to 1966 took place in Wellington (37 per cent) and Huron (35 per cent) counties.

Education

Recent studies suggest that education is one of the most significant variables in economic growth. The Economic Council of Canada, in its Second Annual Review, pointed out that income of individuals is, in general, closely related to the extent of their schooling. Not only does such investment in human capital benefit individuals through increased incomes and a better quality of life, but it also benefits the community in the increased productivity of its labour force. In addition, quality of labour is an important variable considered by industrialists when choosing a new location. Thus the level of educational attainment by the Region's adult population is a reflection of the present labour quality, and the existing school population structure and the associated educational facilities are indicative of the potential of the Region's prospective labour force.

Although the educational attainment of the adult population has improved in all four counties of the Midwestern Ontario Region, the regional increase from 1951 to 1961 was not as great as that of the Province. The 1961 educational attainment in the Region closely approximated the 1951 provincial distribution (See Table 3.8).

The small proportion of people having grade 13 or post-secondary education is most pronounced in the predominately

agricultural counties of Huron and Perth. Considerable improvement in educational attainment has occurred, however, particularly in Huron County, where in 1961 they had the highest percentage of people with four years or less of secondary education.

Table 3.8

PERCENT OF POPULATION, FIVE YEARS OF AGE AND OVER,
NOT IN SCHOOL, BY YEARS OF SCHOOLING

	<u>Grade 8 or less</u>		<u>Grade 9-12</u>		<u>Grade 13+</u>	
	<u>1951</u>	<u>1961</u>	<u>1951</u>	<u>1961</u>	<u>1951</u>	<u>1961</u>
Huron	58.7	51.3	33.1	39.3	8.2	9.4
Perth	61.9	54.0	30.4	36.5	7.7	9.5
Waterloo	57.7	50.7	34.2	38.2	8.1	11.1
Wellington	53.9	49.2	36.5	38.5	9.6	12.3
Midwestern Ontario	57.7	51.0	33.9	38.1	8.4	10.9
Region						
Province of Ontario	50.7	45.7	38.3	40.1	11.0	14.2

Source: Dominion Bureau of Statistics, Census of Canada, Population, 1951 and 1961.

Generally, the educational achievement of the people of Midwestern Ontario is below the provincial average. The factors which contributed to this disparity during the 1951-1961 period can only be conjectured. It is possible that many of the better educated people of the Region emigrated during that period; that the people coming to the "Golden Triangle" in search of employment opportunities were less well educated; that the poor achievement levels of those in school prior to 1961 caused the comparison statistics to deviate from the present situation.

The educational levels of the school age population are

shown on Table 3.9 which presents the secondary school survival rates from 1962 to 1966. The percentage of students who started grade 9 in 1962 and completed grade 13 in 1966 was higher in the Province than in Midwestern Ontario. On the other hand, a greater percentage of the students in the Region completed grades 11 and 12 than in the Province generally.

Table 3.9

SECONDARY SCHOOL SURVIVAL RATES, 1962-1966*

	1962 Grade 9 %	1963 Grade 10 %	1964 Grade 11 %	1965 Grade 12 %	1966 Grade 13 %
Huron	100.0	88.8	66.7	54.4	23.7
Perth	100.0	85.2	64.0	55.7	26.1
Waterloo	100.0	85.6	75.2	65.2	32.6
Wellington	100.0	85.5	70.4	60.5	30.6
Midwestern Ontario Region	100.0	86.1	70.7	60.6	29.5
Province of Ontario	100.0	86.4	68.0	58.7	30.5

*Survival rate calculated with 1962=100%

Source: Calculated from Secondary School Enrolment Projections, Ontario Institute for Studies in Education

There were disparities within the Region itself with the urban counties of Waterloo and Wellington having a higher survival rate than the more rural counties of Huron and Perth. The latter two counties were below the Provincial average.

Student-teacher ratios can also be an important indication

of the quality of education in a given area. A low ratio may improve the quality of education by providing greater individual attention to students and perhaps offering a wider range of courses.

As shown on Table 3.10, student-teacher ratios in the Mid-western Ontario Region are higher than in the Province, for both the elementary and secondary school systems. Only the County of Waterloo compares favourably with the provincial averages. Within the elementary school system, the student-teacher ratios are higher for the Roman Catholic Separate Schools which may reflect the financial problems faced by a minority who wish to provide a separate educational system for their children.

The size of schools, as measured by the number of pupils per school, in Midwestern Ontario compares favourably to the Province. Public elementary schools in the Region have relatively fewer students (282 per school compared to 326 in the Province) while secondary schools have slightly more students per school in the Region than in the Province.

The Midwestern Ontario Region is well endowed with post-secondary educational institutions, having three universities, a community college, a teachers training college, an agricultural college and a variety of business and commercial schools. Almost all of these facilities are located in the "Golden Triangle," requiring travel or relocation by students living outside this

Table 3.10

ENROLMENT, STUDENT-TEACHER RATIO, AND PUPILS PER SCHOOL, SEPTEMBER, 1968

<u>Enrolment</u>	Huron	Perth	Waterloo	Wellington	Midwestern Ontario Region	Province of Ontario
<u>Total Elementary</u>	10,408	11,782	46,083	20,017	88,290	1,430,590
Public	8,977	9,903	30,478	15,107	64,465	1,021,676
Roman Catholic	1,431	1,879	15,605	4,910	23,825	408,914
<u>Total Secondary</u>	4,465	5,029	14,644	7,163	31,301	500,807
<u>Student-Teacher Ratios</u>						
<u>Elementary:</u>						
Public	28.2	29.0	26.0	29.1	27.4	26.0
Roman Catholic	29.8	30.8	26.6	29.6	27.7	26.7
<u>Secondary:</u>	17.3	18.2	16.8	17.3	17.2	16.6
<u>Pupils per School</u>						
<u>Elementary:</u>						
Public	272	184	331	302	282	326
Roman Catholic	143	188	347	289	291	299
<u>Secondary:</u>	893	718	1220	716	921	906

Source: Ontario Department of Education, Report of the Minister of Education, 1968.

urban complex. However, higher education is generally specialized and it cannot be anticipated that such services would be available in each urban centre.

In the secondary school system, the Arts and Science program is the most popular in all counties of the Midwestern Region. There are area differences with regard to other programs. In Waterloo and Wellington counties, there is a greater percentage enrolled in Business and Commerce and the occupational trades. This may very well reflect the employment opportunities available in local industry.

In 1968, there were 12 secondary schools in Huron and Perth counties serving an area of 2,135 square miles. This compares with 22 secondary schools in Waterloo and Wellington counties serving an area of 1,535 square miles. As a result, it is possible that students in the former two counties might have to travel farther to school than those in the latter two more urbanized counties. Also, it is generally accepted that the rural tax base is lower than that of urban areas. This may result in the inability of rural areas to provide adequate educational facilities. However, further investigation would be necessary in order to determine whether or not differences in standards of education are due to differences in the socio-economic structure of an area.

The Ontario Institute for Studies in Education (OISE) forecasts that there will be an increase in enrolment in secondary schools in all counties until the school year 1977-1978, after which a decline will follow. The OISE group also suggests that the rural counties of Huron and Perth will account for a decreasing share of the secondary school population, with Waterloo and Wellington increasing their present share.

In the 1968-1969 school year, new administrative procedures went into effect. The analysis of education to date has been based on statistics that were derived prior to the restructuring of the new administrative units. Therefore future evaluation of new data must primarily take this restructuring into account. Under the new administrative procedures each of the ten regions has a Regional Superintendent of Education who will be associated with such Department of Education activities as educational television, community programs and special education in their respective regions, in addition to their direct administrative responsibilities.

Former District Inspectors are now Area Superintendents of Schools and will be responsible for the total program in the public and Roman Catholic Separate elementary schools, as well as secondary schools under their jurisdiction. They will also assist teachers in planning their programs.

Program Consultants will serve school boards, principals and teachers in a consultative capacity. They will be available

to work in seminars, workshops, and other "in-service" activities at the invitation of the senior education officer of the local authority.

In conclusion, there is a need to bring the level of educational attainment within the Midwestern Ontario Region into accord with that of the Province as a whole. Further, intra-regional disparities should be alleviated as much and as soon as possible. Any reduction in socio-economic inequalities will aid the rural population, especially in areas with decreasing population trends, low educational attainment, and low levels of income.

Health

The distribution and standard of health facilities provided in the Midwestern Ontario Region are not unlike the educational facilities discussed earlier - the more rural counties of Huron and Perth again lag behind their more urban counterparts of Waterloo and Wellington counties.

Table 3.11

DENTISTS AND DOCTORS PER UNIT OF POPULATION, 1966

	Population	No. of Dentists	Dentists per Population	No. of Doctors	Doctors per Population
Huron	54,446	13	1/4,188	35	1/1,566
Perth	60,424	16	1/3,777	57	1/1,060
Waterloo	216,728	82	1/2,643	246	1/881
Wellington	94,177	30	1/3,139	97	1/971
Total, Mid- Western Region	425,775	141	1/3,020	435	1/979
Total, Province of Ontario	6,960,870	2,616	1/2,661	9,174	1/759

Source: See Tables 16 and 17 in Statistical Appendix.

Estimates compiled by the Royal College of Dental Surgeons of Ontario for the year 1968 indicated that the four counties of the Region were

below the provincial norm in the number of dentists per population. In 1966 Waterloo County had a dentist/population ratio better than that of the Province. All counties showed some improvement over the two years 1966-1968, except Huron County. (Table 17, Statistical Appendix),

When considering the availability of doctors within Mid-western Ontario, it can be noted that all counties are below the provincial average (Table 3.11). As with dentists, a large proportion of doctors are found in the more urbanized counties of Waterloo and Wellington. This may be due to the professional nature of these occupations and the specialization within them which require localized services and consultation.

The Midwestern Region is well endowed with some eighteen hospitals (Table 3.12).

Table 3.12

HOSPITAL SERVICES, 1966

	<u>Hospitals</u>			<u>Rated Beds</u>		<u>No. of Beds per 1000 Population</u>
	<u>No.</u>	<u>Total</u>	<u>Active</u>	<u>Psychiat- ric and Convaless- cent</u>	<u>Chronic</u>	
Huron	5	307	265	-	42	5.6
Perth	3	440	335	-	105	7.3
Waterloo	5	1,169	954	15	200	5.4
Wellington	5	630	495	-	135	6.7
Total, Mid- Western Ontario Region	18	2,546	2,049	15	482	6.0
Total, Province of Ontario	317	45,828	37,228	1,337	7,263	6.6

Source: Ontario Hospital Services Commission, 1966 Annual Report, Statistical Supplement.

The Ontario Hospital Services Commission has devised a method to determine bed space requirements per thousand population for public hospitals, excluding psychiatric care where grants are not provided by the Commission. Generally the bed space can be allocated as follows:

Active Beds - 5 per thousand people
Chronic Beds - 1 per thousand
Convalescent and Rehabilitation Beds - 0.25 per thousand
Northern Ontario - 0.25 beds per thousand

Total - 6.50 beds per thousand population

These ratios are guidelines used by the Ontario Hospital Services Commission and are only approximations, as bed space for any particular region is also weighted by age groups. For example, in a large urban complex, the ratio might be lower because a large percentage of the total population is in the younger age groups. On the other hand, in a region where there is a higher percentage of older people, the bed ratio would be correspondingly higher to meet the requirements of the area. The Ontario Hospital Services Commission used 6.6 beds per thousand population as a provincial norm.

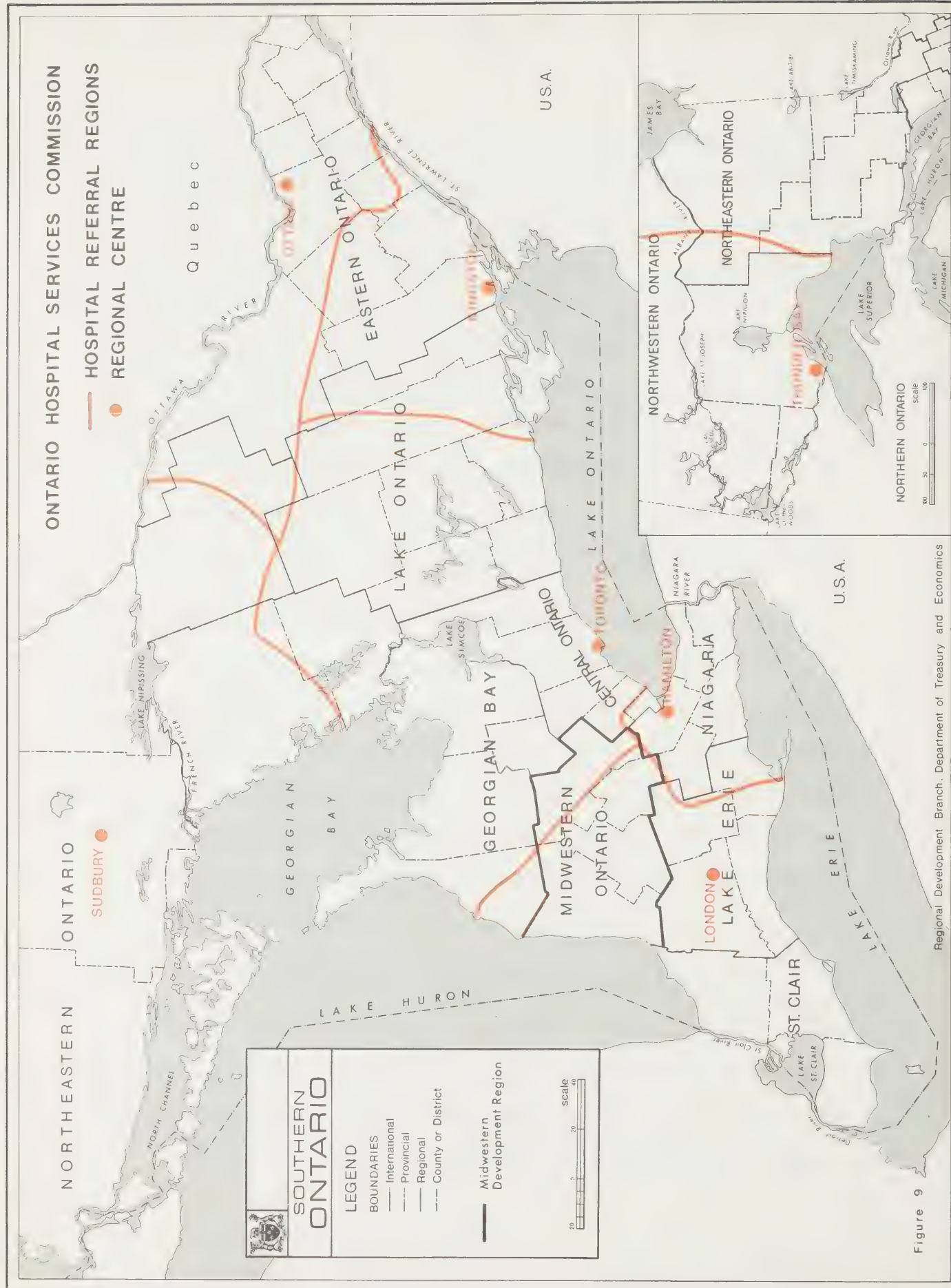
With this as a basis, the Midwestern Ontario Region was below the provincial norm in 1966 (Table 3.12). Within the Region, Perth and Wellington counties were above the provincial average, while Waterloo and Huron were below. In Huron, the active bed ratio was very close to the provincial norm which would indicate a

lack of chronic and convalescent beds. A major addition to the Kitchener-Waterloo Hospital in 1969 has helped to bring Waterloo County up to provincial standards.

The Dominion Bureau of Statistics recently published a List of Canadian Hospitals - 1970 which indicates that major psychiatric facilities for the Region are located in both Guelph and Goderich. These facilities, plus the close proximity of psychiatric care in Woodstock and London adequately fill the Region's needs. In addition, special hospitals for mentally retarded children are located in Palmerston and in Waterloo.

Figure 9 indicates the regions into which the Province has been divided by the Ontario Hospital Services Commission for its program of planning to meet needs for hospital beds and services. Although these regions are not used for administrative purposes, they do indicate in a generalized way the areas from which patients are referred to regional centres, usually university centres, which can provide the specialized types of care that cannot be made available in local hospitals. Thus for the Midwestern Region, Toronto and London are the regional centres to which referrals would be made.

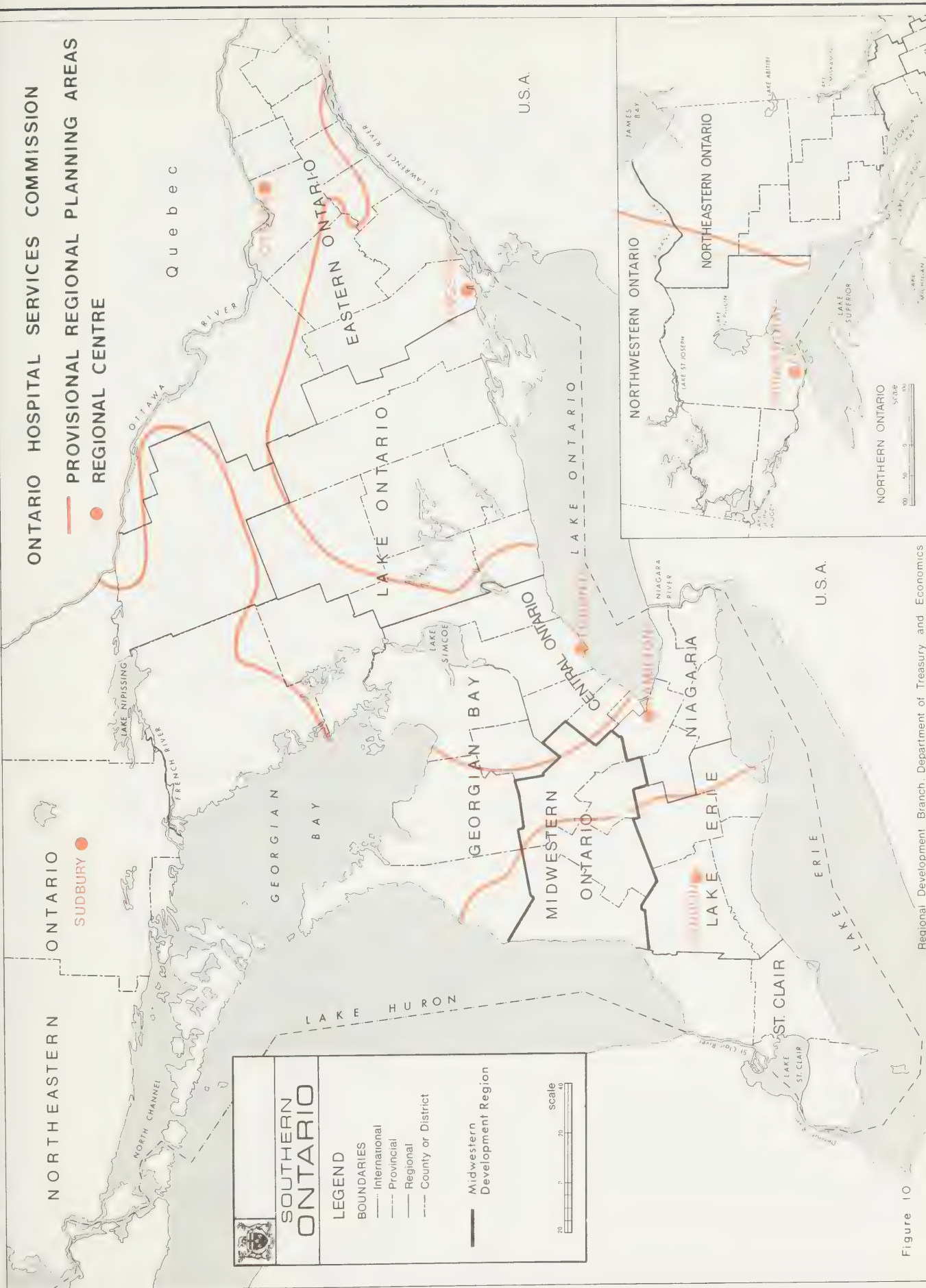
Figure 10 shows the divisions which are being considered by the O.H.S.C. for regional planning purposes. The main objectives of the Commission's regional planning are:



ONTARIO HOSPITAL SERVICES COMMISSION

— PROVISIONAL REGIONAL PLANNING AREAS

● REGIONAL CENTRE



Regional Development Branch, Department of Treasury and Economics

- (a) to meet the hospital needs of the community as a whole by making available the necessary beds and services to provide high quality care;
- (b) to eliminate unnecessary duplication of beds and services;
- (c) to permit maximum utilization of professional and technical personnel;
- (d) to achieve these with the greatest economy of financial resources.¹

Should the regional planning areas delimited in Figure 10 be adopted by O.H.S.C., the western part of the Region (mostly Huron and Perth counties) will be within the London referral system and the eastern part (Waterloo and Wellington counties) will change from the Toronto to the Hamilton referral division. Regional referral centres are based on the location of university hospitals. Within the Region, Kitchener now serves the role of a district referral centre.

¹Ontario Department of Health, Report of the Ontario Council of Health on Regional Organization of Health Services, January 1969. p. A.13.

The Ontario Department of Health is presently engaged in a program to assist physicians and dentists to enter general practice in underserviced areas of the province, by guaranteeing them an annual income and providing grants. In the Midwestern Ontario Region, the following areas were designated as underserviced as of March 1970: Seaforth in Huron County; Milverton in Perth County; Arthur, Drayton Erin, Hillsburg, Moorefield (Maryboro Township), Palmerston and Rockwood in Wellington County.

In order to qualify for listing as underserviced, municipalities are required to ensure that adequate clinic, office and housing facilities are available at reasonable rates. These requirements are somewhat difficult to meet for less prosperous municipalities especially in the more rural parts of the Region.

Under an additional scheme, substantially increased bursaries have been established in order to encourage Ontario medical and dental students to enter general practice in areas designated as underserviced.

Public Safety

As a measure of public safety, the incidence of accidents, crime and fires for the Region and its counties was compared to a provincial average.

Table 3.13 portrays the variation among counties in terms of average annual traffic fatalities for the 1961 to 1966 period.

Table 3.13

ANNUAL AVERAGE TRAFFIC FATALITIES
MIDWESTERN ONTARIO REGION, 1961 TO 1966

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Ontario</u>
Ratio of Traffic Fatalities Vehicles, (1)	101	88	56	70	70	62

Note: (1) The ratio is computed from the number of traffic fatalities per 100,000 vehicles, 1961 to 1966.

Source: Province of Ontario, Vital Statistics for 1961 and 1966, Queen's Printer.

It is important to note that traffic fatalities data are recorded by place of residence of the victims, not by place of occurrence. It is apparent that the more rural counties of Huron and Perth have a higher incidence of traffic deaths than the more urbanized counties of Waterloo and Wellington. Huron, Perth and Wellington counties plus the Region as a whole, have traffic fatality rates above the provincial norm. The most outstanding are Huron County (with a rate 63 per cent above the provincial average) and Perth County (42 per cent).

The number of drownings was used as a measure of recreational accidents. Fatalities from drowning are also recorded by place of residence and thus would not include tourist victims.

Table 3.14

DROWNINGS IN THE MIDWESTERN ONTARIO REGION,
ANNUAL AVERAGE, 1961 TO 1966

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Ontario</u>
Ratio of Drownings to Population 1961-66 (1)	55	33	23	53	35	51

Note: (1) Calculated with annual average number of drownings per million population.

Source: Province of Ontario, Vital Statistics for 1961 and 1966, Queen's Printer.

The rate of drownings for the Region is 21 per cent below the provincial norm. Significantly the highest incidence of drowning occurs in those counties with the most intense outdoor recreational activity. Huron County has a rate of 8 per cent, and Wellington County, 4 per cent above the provincial average.

For the Midwestern Ontario Region, the rates of fatal industrial accidents per labour force is significantly lower than that of the Province. This advantage pertains to all counties except Wellington where the rate is 11 per cent above the provincial average. For non-fatal accidents per labour force the Region is again below the provincial norm. Only in Waterloo County is the rate slightly higher than that of the Province. While there is a general tendency for fatal industrial accident rates to decrease with increasing urbanization, non-fatal accidents tend to increase.

Table 3.15

OCCUPATIONAL AND OTHER ACCIDENTS,
MIDWESTERN ONTARIO REGION, 1966 AND 1968

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Ontario</u>
Ratio of Fatal Indus- trial Acci- dents to Labour Force, 1968 (1)	99	44	34	112	60	101
Ratio of Non-Fatal Industrial Accidents to Labour Force, 1968 (2)	22	29	44	36	38	41
Ratio of Other Acci- dental Deaths to Population, 1966 (3)	51	48	30	38	37	36

Note: (1) Labour force data were estimated from 1966 population data and 1961 labour force participation rates. The ratio was computed per 1,000,000 labour force.

(2) Computed per 1,000 labour force.

(3) Computed per 100,000 population.

Source: Special Tabulation, Workmen's Compensation Board 1970.
Province of Ontario, Vital Statistics for 1966, Queen's
Printer.

An evaluation of other accidental deaths¹ (excluding traffic accidents and death by drowning) shows that for the Midwestern Region as a whole plus all counties except Waterloo, the rate of occurrence is above the provincial norm. Huron County has the highest ratio

¹This category includes a variety of causes of death such as poisoning, firearms, falls, homicide, suicide and explosions.

(42 per cent above the provincial average) and Waterloo County the lowest ratio (17 per cent below the provincial average). On the whole, the incidence of other accidental deaths in the Midwestern Region decreases with increasing urbanization.

Table 3.16

CRIME IN THE MIDWESTERN ONTARIO REGION, 1967-1968

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Ontario</u>
Ratio of Reported Crimes to Population (1)	8	24	38	20	32	49
Ratio of Police to Reported Crimes (2)	122	55	34	79	47	33
Ratio of Police to Population (3)	101	131	126	157	138	164

Note: (1) Computed per 1,000 population.
 (2) Computed per 1,000 reported crimes.
 (3) Computed per 100,000 population.

Source: Ontario Police Commission, Consolidation of Criminal Statistics, Ontario Provincial Police, 1967 to 1968, Department of Justice, Special Tabulation, 1968.

The incidence of reported crimes in the Midwestern Ontario Region and its component counties is significantly below the provincial average. Huron County is noteworthy in this regard with its crime rate 84 per cent below that of the Province. The

highest crime rate is reported in the most densely populated (and most urbanized) part of the Region (Waterloo County). Here the crime rate is still 22 per cent below the provincial level, but as the highest rate in the Region, it may be approaching a level at which this hazard to public safety might be considered a problem. It should be noted, that crimes are reported by place of occurrence rather than by place of residence of the perpetrator.

The low incidence of reported crimes has required fewer police per capita than the provincial average. As a result the number of police required in relation to the number of reported crimes is much higher than in the Province generally, especially in Huron and Wellington counties.

Table 3.17 shows that, for the Region as a whole, the incidence of fires per 1,000 dwellings approximated the provincial average for the period 1965 to 1969. Only Perth and Wellington counties had fire occurrence rates above the provincial average, while in Huron County the rate was significantly lower. In damage to property, only Huron County was below the provincial average in 1969. Wellington and Waterloo counties had below average rates of fatalities from fire, though the Region as a whole was above the provincial average. Significantly, Huron County, with below-average incidences of fires per dwelling, and below-average property damage, had over twice the provincial rate of fatalities from fire. Perth County in 1969, had over three times the provincial rate in fatalities from fire. It should be noted that while the Region as a whole has approximately the

same ratio of firemen to number of fires as does the Province, Huron County, with its very small number of fires has more than twice the average ratio of firemen. Waterloo, Perth and Wellington counties fall slightly more than ten per cent below average.

Table 3.17

FIRES IN THE MIDWESTERN ONTARIO REGION, 1965 TO 1969

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Ontario</u>
Ratio of No. of Fires to Dwellings (1)	7	12	11	15	11	11
\$ Value of Property Damage per Dwelling 1969	\$16	\$27	\$27	\$27	\$26	\$25
Ratio of No. of Fatalities from Fire to Population (2)	55	83	14	---	26	24
Ratio of Fire- men to Fires (3)	216	84	84	86	95	95
Ratio of Fire- men to Popula- tion (4)	42	29	24	34	29	28

- Note: (1) Computed as the annual average number of fires per 1,000 dwellings, 1965-1969.
 (2) Computed as the annual average number of fatalities per million population, 1965-1969.
 (3) Calculated per 100 fires, 1969.
 (4) Calculated per 10,000 population 1969.

Source: Fire Marshall, Annual Report, Department of Justice, 1968.

Recreational And Cultural Facilities

In recent years substantial increases in income, leisure time, geographic mobility and urbanization have been attained by the population of North America. These factors largely determine the level of demand for recreational services and facilities, (and thus the pressure to which existing facilities in vacation areas are subjected) and also the future prospects of the tourist industry.

The population of the Midwestern Ontario Region increased by 14.2 per cent between 1961 and 1966, reaching a total of approximately 426,000 people in 1966. This increase was second only to the Central Ontario Region. Preliminary projections predict a population of some 523,000 to 581,000 by 1981.

This overall growth, together with increasing urbanization within the Region is creating a substantial and increasing local demand for recreational opportunities. Moreover, the Region is quite accessible to the major urbanized portions of Southern Ontario and the Northern United States.

Highway 401 cuts through the southern urbanized section of the Region and links it with Toronto in the east and London, Windsor and Detroit in the west. Highways 8 and 6 link the Region with Hamilton, and the Queen Elizabeth Way (QEW) with the Niagara Peninsula and Buffalo.

LEGEND

- | | |
|--------------------------|-----|
| Provincial Park | ▲ |
| Conservation Area | ■ |
| Private Development Area | □ |
| Major Highway | == |
| Fireway | == |
| Nagara Escarpment | ★ ☆ |
| Licensed Airport | ✈ |
| Unlicensed Airport | ✈ |
| DHO Picnic Area | ☐ |
| Festival Site | ▲ |
| Historic Site | ▲ |
| Marina | ○ |
| Skate Area | ⊗ |
| Golfing Area | ⌂ |



Source: REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS

Within the Region there is a fairly well developed transportation infrastructure upon which the growth of tourism can be encouraged. A community pattern, which is still largely latent but which may emerge strongly in the period ahead, is based on the recreation travel paths from Kitchener-Waterloo and Guelph along Highways 8 and 86 to the Huron shoreline. These have potential as recreation corridors, along which the communities could develop their distinctive attractions, as has occurred in Stratford. The Highway 8 corridor has the greatest potential because it is closely linked to Toronto by means of Highway 401; the recreation travel habit to Stratford from points east is well established; and there is a terminal magnet of considerable potential in the town of Goderich - with its attractive harbour site, distinctive town plan and historical interest associated with the Canada Company.

Tourist Accommodation Spending on accommodation generally consumes a large portion of the tourist dollar, and the attractiveness of such facilities may influence the development of tourism in a region.

The trend in the type of accommodation available in Midwestern Ontario closely followed that of the Province between 1956 and 1957 (See Table 3.18). The number of cabins and hotels declined while the number of motels and cottages increased. The bed capacity increased by 1,846 during this decade, mainly in

TABLE 3.18.

NUMBER OF TOURIST ESTABLISHMENTS, CAPACITY AND AVERAGE CAPACITY PER ESTABLISHMENT, BY TYPE OF RENTAL UNIT, COUNTIES, MIDWESTERN ONTARIO REGION, 1956 AND 1967

	Hotels			Motels			Cabins			Cottages			Total		
	1956	1967	% Change 1967/56	1956	1967	% Change 1967/56	1956	1967	% Change 1967/56	1956	1967	% Change 1967/56	1956	1967	% Change 1967/56
Huron															
Establishments	18	17	-5.6	3	13	332.3	18	6	-66.7	6	6	-	45	42	-6.7
Capacity	749	589	-21.4	90	466	417.8	337	98	-70.9	272	267	-1.8	1,448	1,420	-1.9
Average Capacity per Establishment	42	35	-16.7	30	36	20.0	19	16	-15.8	45	45	-	32	34	6.3
Perth															
Establishments	17	11	-35.3	6	12	100.0	4	1	-75.0	-	-	-	27	24	-11.1
Capacity	780	530	-32.1	182	489	188.7	32	16	-50.0	-	-	-	994	1,035	4.1
Average Capacity per Establishment	46	48	4.3	30	41	36.7	8	16	100.0	-	-	-	37	43	16.2
Waterloo															
Establishments	34	34	-	11	21	90.9	4	1	-75.0	-	2	-	49	58	18.4
Capacity	1,370	1,669	21.8	423	1,515	258.2	48	16	-66.7	-	4	-	1,841	3,254	76.8
Average Capacity per Establishment	40	49	22.5	38	72	89.5	12	16	33.3	-	27	-	38	56	47.4
Wellington															
Establishments	19	14	-26.3	5	11	120.0	6	2	-66.7	-	3	-	30	30	-
Capacity	747	795	6.4	88	517	487.5	220	54	-75.5	-	109	-	1,055	1,475	39.8
Average Capacity per Establishment	39	57	46.2	18	47	161.1	37	27	-27.0	-	35	-	35	49	40.0
Midwestern Ontario Region															
Establishments	88	76	-13.6	25	57	128.0	32	10	-68.8	6	11	83.3	151	154	2.0
Capacity	3,646	3,583	-1.7	783	2,987	281.5	637	184	-71.1	272	430	58.1	5,338	7,184	34.6
Average Capacity per Establishment	41	47	14.6	31	52	67.7	20	18	-10.0	45	39	-13.3	35	47	34.3

1 Estimated on the basis of an average capacity, per hotel room, of 2.0 persons, in Huron, Wellington and Perth counties.

Sources: Ontario, Department of Travel and Publicity, Where to Stay in Ontario, 1956.

Ontario, Department of Tourism and Information, Where to Stay in Ontario, 1967.

motel accommodation, and was generally concentrated in Waterloo County.

The pattern of development suggests an improvement in the structure of the Region's lodging industry as new (medium to large size) establishments, especially motels, permit the realization of economies of scale and are generally more professionally operated than the aging hotels and cabins.

In 1968, occupancy for all types of accommodation in the Midwestern Ontario Region averaged 53 per cent in January and 70 per cent in July, as shown in Table 3.19.

Table 3.19

ACCOMMODATION OCCUPANCY, JANUARY and JULY, MIDWESTERN ONTARIO REGION, 1968

	January %	July %
Hotel-Motor Hotel (Licenced)	59.0	54.7
Hotel	17.2	60.5
Motel	47.0	87.7
Cabin	none	55.5
Cottages	none	none
Campsite	none	100.0
Lodges	none	none
Regional Average	53.0	70.1
Provincial Average	46.0	68.0

Source: Ontario Department of Tourism and Information, Ontario Tourist Establishment Occupancy, January and July 1968, Report No. 32., 1969.

The occupancy rate in the Midwestern Region was above the

provincial average in both seasons. Projections indicate that the Waterloo-South Wellington area will need at least 300 additional hotel-motel units by 1971 and at a minimum, 600 more between 1971 and 1981.¹

Cottages According to information supplied by the Ontario Hydro-Electric Power Commission, there were some 4,200 private cottages in the Midwestern Region in 1968. This represents approximately three per cent of the total number of private cottages in the Province. Most of the cottages, 2,800, are located along the Lake Huron shoreline while the remainder can be found along the inland kettle lakes, quarries and lakes created by Conservation Authority dams. Further cottage development around these conservation lakes is not being encouraged. The limited amount of remaining underdeveloped lake-side sites will require that major attention be given to "in depth" and "cluster" design for future water-oriented private recreation facilities.

Open Space There are approximately 26,500 acres of open space in the Midwestern Ontario Region or, based on the 1966 population, one acre for every 16 persons. The extent and breakdown of this open space is given on Table 3.20. The importance of the Conservation Areas in supplying regional recreational open space

¹Canadian Urban Economics Ltd., Waterloo-South Wellington Area Economic Base Study, Prepared for the Economic Development and Planning Technical Advisory Committees of the Waterloo-South Wellington Area Study, July 1969. Units were based on the following ratios: 4-6 units/1,000 population in heavily urbanized areas and 1-2 units/1,000 population in the less heavily urbanized areas.

is readily apparent. However, only about one-fourth of the Conservation acreage has been developed for recreational purposes. Some of this land is not usable for recreational open space, but for protection of a resource.

Table 3.20

REGIONAL RECREATIONAL OPEN SPACE

<u>PUBLIC</u>	<u>No.</u>	<u>CAMPSITES</u>	<u>ACRES</u>
1. Provincial Parks			
Point Farms - Huron County	1	215	575
2. Conservation Areas			
Huron County	5	74	699
Perth County	8	62	3,480
Waterloo County	7	150	1,250
Wellington County	8	450	16,937
TOTAL	28	736	22,366
3. DHO Picnic Areas	17	-	15
<u>PRIVATE</u>			
1. Campsites & Trailer Camps			
Huron County	7	555	83
Perth County	2	174	220
Waterloo County	9	360	382
Wellington County	5	211	769
TOTAL	23	1,300	1,454
2. Ski Areas	3	-	70
PUBLIC & PRIVATE GOLF COURSES	30	-	2,000
TOTAL MIDWESTERN ONTARIO REGION		2,251	26,480

Source: Compiled from tabulations prepared by the Ontario Department of Tourism and Information.

Conservation Areas Conservation areas offer such facilities as camping, swimming, picnicking, boating, fishing, hiking on nature trails and conservation demonstrations. The intensively developed areas charge a gate fee. In 1968, approximately 575,000 visitors used the 28 conservation areas. The following are the more intensively used conservation areas in each county of the Midwestern Ontario Region.

Table 3.21

INTENSIVELY USED CONSERVATION AREAS BY COUNTY, 1968

<u>Conservation Area and Location</u>	<u>Size (Acres)</u>	<u>Visitors</u>	<u>Campsites</u>	<u>Camper Days</u>
Huron County:				
<u>Falls Reserve,</u> near Benmillar on the Maitland River	299	4,000	74	
Perth County:				
<u>Wildwood,</u> near St. Marys on the Thames River	3,100	46,000	62	2,200
Waterloo County:				
<u>Pinehurst Lake,</u> south of Galt	198	79,000	150	5,800
<u>Chicopee Hills,</u> Kitchener	146	100,000		
<u>Doon Pioneer Village,</u> Kitchener	58	47,000		
Wellington County:				
<u>Elora Gorge,</u> on the Grand River	326	98,000	400	9,300
<u>Rockwood,</u> on the Eramosa River	197	47,000	50	1,000
<u>Conestogo Lake</u>	5,108	30,000		
<u>Belwood Lake</u>	3,200	41,000		
<u>Silver Creek,</u> Guelph	43	40,000		

Sources: Department of Energy and Resources Management, Conservation Authorities Branch, Special Tabulations, 1968.
Department of Energy and Resources Management, Conservation Authorities Branch, Guide to Conservation Areas, 1969.

Five more conservation dams, with resulting recreation areas are proposed. These will be located near West Montrose on the Grand River, near Ayr on the Nith River, near Hespeler and Guelph on the Speed River and near Everton on the Eramosa River.

It should be pointed out that relatively few Conservation Authorities exist on the shorelines of Lake Huron for the area which forms the boundary of the Midwestern Ontario Region.

Provincial Parks There is only one provincial park in the Region, Point Farms, located on the Lake Huron shore, five miles north of Goderich. The Park, which was opened in 1965 and not fully developed until 1968, contains 575 acres and has 215 campsites. A 1968 user survey indicated the following:

- a) 80,696 persons visited the Park
- b) 6,483 campers spent 13,727 camper days,
or an average length of stay of 1.6 nights
- c) 85 per cent of the campers came from the
Province of Ontario and 18 per cent from
the Midwestern Ontario Region.

The importance of this Park to the Region is indicated by the fact that approximately 20 per cent of the campers are from Midwestern Ontario. It is probable that the proportion of day visitors from within the Region would be even higher as the Park is within day-trip range of all parts of the Region.

Pinery Provincial Park is located just outside the Region on the Huron shore, south of Grand Bend. It is a larger park (5,161 acres) with 1,075 campsites and receives more than eight times as many visitors as Point Farms. The percentage of campers from the Midwestern Region to this Park is approximately 15 per cent. Moreover, it is within day-trip range of all parts of the Region.

In addition, the provincial government has recently announced that it will establish a 5,000-acre wildlife area on marshland bordering the South Maitland River in Hullett Township.

Cultural Facilities The Stratford Shakespearean Festival is the main cultural feature for tourist attraction in the Region. Its importance can be seen from the results of a Visitor Survey conducted by the Department of Tourism and Information in 1966. This survey showed that approximately \$8 million was generated by tourists in Stratford that year, \$5 million of which was spent by visitors who came to see the Festival. The same survey also concluded that 20 per cent of employment in Stratford and vicinity was generated by tourism.

There are also several other special events in the Region which attract tourists. Of special note are the Elmira Maple Sugar Festival, the Highland Games in Fergus, the Midwestern Rodeo in Exeter, the Kitchener Oktoberfest, the Zurich Bean Festival and the

Kitchener Market. In addition, there are facilities of historical and cultural interest which include five historic museums, two public art galleries, a symphony orchestra and theatrical facilities.

Expenditures A report by the Department of Tourism and Information in 1967 indicated that Midwestern Ontario ranked eighth in the number of visitors and ninth in visitor spending in the ten regions. In that year, less than six per cent of the total number of visitors to Ontario came to the Midwestern Region. Ontario residents made up the largest component of visitors to the Region, over

Table 3.22

NUMBER OF VISITORS AND EXPENDITURES, 1967

	<u>No. of Visitors</u>	<u>Expenditures of Visitors (\$000's)</u>
Ontario	3,785,035	24,268
U.S.A.	131,968	3,362
Other Provinces	<u>81,974</u>	<u>2,088</u>
Total	3,998,977	29,718
% of Provincial Total	5.6	2.6

Source: Ontario Department of Tourism and Information, Travel Research Branch, Number of Visitors to Ontario Vacation Areas and Their Expenditures: Compared with Expenditures of Local Residents, Short Report No. 37, 1967.

94 per cent (See Table 3.22). Most of the Ontario visitors came from either the Metropolitan Horseshoe or Western Regions.¹ In 1966-67 over 91 per cent of the total number of trips to Midwestern Ontario were generated from these two areas.

Less than three per cent of total provincial recreation expenditure occurred in the Midwestern Region in 1967 (Table 3.22). Of total trip expenditures by Ontario residents to Midwestern Ontario, 24.9 per cent were for vacation trips, 63.3 per cent for personal trips and 11.8 per cent for business trips.

Expenditure on recreation and community services varies widely among towns, villages and townships in the Midwestern Region. The small villages and townships spend less, as the surrounding rural areas provide ample recreational open space for the citizens and because libraries, museums and art galleries are found in the Region's larger urban centres.

The average per capita provincial expenditure on recreation and community services in 1964, 1965 and 1966 was \$6.50. The major urban centres of the Midwestern Region all spent more than this. For example, expenditures in Galt were \$11.80 per capita; Goderich, \$11.40;

¹Ontario Department of Tourism and Information, A Study of the Travel Habits of Ontario Households, June 15, 1966 to June 14, 1967, by Peter Klopchic, Toronto, June, 1969. Metropolitan Horseshoe = Central Ontario and Niagara Regions; Western = Lake Erie, Lake St. Clair, and Midwestern Ontario Regions.

Kitchener-Waterloo, \$8.80; Guelph, \$7.30; Preston \$7.10; and Stratford, \$6.60.¹

Recreation Factor Analysis Using 40 selected variables relating to recreation in all counties and districts in the Province of Ontario, the Ontario Economic Atlas, produced by the Department of Geography, University of Toronto, shows how the Midwestern Region ranks in the provincial recreational matrix. Table 3.23 presents a summary of the factor analysis.

Table 3.23

RATING OF RECREATION FACTORS

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>
Employment in recreation	Average	Very Low	Very Low	Very Low
Cottaging and camping	Moderately Low	Quite Low	Average	Very Low
Use of recreational facilities	Moderately Low	Very Low	Moderately Low	Very Low
Accommodation facilities	Moderately Low	Quite Low	Moderately Low	Very Low

Source: W. G. Dean (ed.), Economic Atlas of Ontario, University of Toronto Press, 1969. Plate 83.

Huron County rates the highest in recreational provision in the Midwestern Region, followed by the County of Waterloo. The other two have a very low rating. Most of the variables used in the factor

¹Figures compiled from Department of Municipal Affairs, 1968 Summary of Financial Reports of Municipalities.

analysis, however, related to accommodation e.g. capacity, number of visitors, and revenue.

An index of tourism which can be used to indicate the seasonal movement of people is beer sales, per cent deviation from the provincial average for June, July and August.¹ Only the Huron shore area shows an increase above the provincial average (Grand Bend area 25 to 30 per cent, Goderich area and north 5-10 per cent). The rest of the Region was 0-10 per cent below the provincial average.

Summary The attractiveness of any area to the tourist or recreation seeker is often found in the natural landscape. In some areas, man's use of these resources can add to the interest of the tourist. Another source of attraction is a region's historic sites. Special events or festivals also bring people into an area. Such attractions, however, need to be supplemented by the development of facilities such as accommodation, restaurants, marinas and information centres.

In the Midwestern Region the natural landscape is mainly that of an "inland region" of flat to gently rolling till plain and moraine, cut by numerous rivers and streams (such as the Grand, Thames, Avon, Conestogo, Nith and Maitland). It does not offer as exciting a landscape for outdoor recreation as many of the other regions. However, much could be done in developing these river

¹W. G. Dean, (ed.). Ontario Economic Atlas, Published for the Government of Ontario by the University of Toronto Press, 1969. Plate 78.

valleys into a system of regional parks. The extensive areas of farming provide a picture of a mature and well cared-for regional environment of high rural productivity. They also contain the distinctive folk cultures of the settlers of Waterloo and Wellington counties. The 45-mile Lake Huron shoreline, which is mainly sandy beach is a very important recreational resource. The Region also contains many historic sites. To date many of these have not been developed to their full potential. The Region's three universities with their modern technology are also important cultural attractions.

The number and capacity of Midwestern Ontario's outdoor recreational facilities (conservation areas, woodlands, open space, rural and urban parks), is presently inadequate to serve the people of the four counties as well as the many people who travel to the Region from other areas. The situation is made more serious with the realization that:

1. Some of the existing facilities are already becoming badly congested and subject to damaging overuse during peak use periods; in the Conservation Areas, in particular, eventual loss or blighting of the attracting environmental features will result.
2. Varying water quality of the Region's watercourses may affect some recreational uses.
3. The Lake Huron waterfront is a very important recreational resource within the Region with substantial

potential for future development for major public regional parks, recreational and Conservation Areas; but to a very large extent the public cannot gain access to it.

4. There has been a substantial depletion of forested areas and farm woodlots in the Region. At the present time the economic return from farm woodlots is not sufficient to compensate farmers for the time and labour needed to preserve them.
5. Tourism, which could form a substantial part of the economic base for large sections of the Region, has not been adequately developed. Numerous latent attractions exist - particularly of an historical and cultural nature.

CHAPTER IV

THE ECONOMIC BASE

Summary

1. Introduction

- (a) The Midwestern Ontario Region as a whole has a well diversified economic base in both the agricultural and manufacturing sectors.
- (b) Huron, Perth and Wellington counties all showed the agricultural sector as one of the main "basic" industrial groups in their respective counties.¹ Significantly, the relative importance of this sector in the economies of all three counties, compared to the Province, increased from 1951 to 1961.
- (c) Manufacturing is "basic" to both Waterloo and Wellington counties -- but much more dominant in the former.

¹The "basic" or "export" sector of a regional economy consists of those industries or segments of industries which supply a market external to the region or county. Conversely, "non-basic" industries supply the local market.

2. Agriculture

- (a) Value of agricultural products sold in the Midwestern Ontario Region has increased by more than 124 per cent between 1951 and 1966, compared to a provincial increase of 76 per cent over the same period.
- (b) Livestock is the most significant cash product in the Region, accounting for over 59 per cent of the total value of agricultural products sold in 1966.
- (c) Farm income in the Midwestern Region would appear to be considerably above the provincial average. The return per farm operator was estimated in 1965 to be only \$632 in the Province generally. This compared to over \$5,600 in Waterloo County (the highest return) and approximately \$1,600 in Huron County (the lowest return in the Midwestern Region).
- (d) Employment opportunities in agriculture have been declining. It is estimated that some 4,000 people left farming for other employment between 1961 and 1966.
- (e) The decline in farm acreage between 1951 and 1966 was relatively insignificant. Some 100,000 acres were taken out of farmland in this period, compared to over two million acres of farmland existing in 1966.

Most of the decreases occurred in the more urbanized counties of Waterloo and Wellington.

- (f) There were 2,850 fewer farms in 1966 than there were in 1951, but the average size of farms increased during this period from 127.5 to 145 acres, indicative of farm consolidations.

3. Manufacturing

- (a) The annual selling value of factory shipments has grown steadily in the Region and in 1966 reached over \$1.3 billion, compared to some \$492 million in 1951. By 1966, the Region's industrial production reached 6.8 per cent of the total manufacturing output in Ontario compared with a post-war low of 5.7 per cent recorded in 1954.
- (b) Waterloo County is the dominant manufacturing area of the Midwestern Region, accounting for over 67 per cent of total employment in this sector in 1968. Five centres: Galt, Guelph, Kitchener, Stratford and Waterloo account for over 80 per cent of total manufacturing employment in the Region although this percentage has declined slightly in recent years.
- (c) Most of the firms in Huron County are relatively small. The major industrial groups providing employment are wood, food and beverage, metal fabricating

machinery, and transportation equipment. These groups are responsible for 65 per cent of the manufacturing employment in Huron County.

- (d) The industrial groups that are dominant in Huron County are generally also the major employers in Perth County. The furniture and fixtures, and rubber industries are important components of the industrial mix in addition to the food and beverage, transportation equipment and the metal fabricating and machinery industries. These groups of industries provide 69 per cent of the employment in the manufacturing sector in Perth County.
- (e) Waterloo County has the greatest industrial diversification, affording employment opportunities in a greater variety of industrial groupings. Metal fabricating, food and beverage, rubber, textile, machinery and transportation equipment industries generate the largest amount of employment. These account for approximately 60 per cent of total employment in Waterloo County.
- (f) In Wellington County, electrical products and metal fabricating industries are dominant, accounting for 40 per cent of total manufacturing employment in Wellington County.
- (g) The rate of growth of manufacturing employment in the

Midwestern Region has been faster than in the Province generally. The fastest growing industries in relation to the Province have been the rubber, textile, transportation equipment and miscellaneous groups. Between 1964 and 1968, paper and allied industries also became a fast growth industry in the Midwestern Region.

- (h) To a large extent, the manufacturing sector in the Midwestern Region is a supplier of parts and inputs to other manufacturers. Almost 45 per cent of total value of output produced in the Midwestern Region was shipped to points in Central and Southwestern Ontario. Only 5 per cent was consumed locally and 25 per cent went to the Central Ontario Region. Other provinces received over one-third of all manufactured outputs.
- (i) Only 13 per cent of the total value of raw materials and manufactured inputs is derived within the Midwestern Region. Ontario as a whole provides almost two-thirds of all manufactured inputs, particularly the Niagara and Central Ontario regions.

Of all inputs channeled into the Midwestern Region, 34 per cent originates from outside Ontario -- 19 per cent from foreign countries.
- (j) Over 70 per cent, by value, of manufactured products were distributed by truck and 27 per cent by rail in 1968. Of the raw materials and manufactured inputs, 80 per

cent was received by truck and only 13 per cent by rail.

- (k) In the survey of manufacturing, 1969 and 1970, the manufacturers in the Midwestern Region ranked the highway and rail transportation systems as the most favourable locational advantages of the Region, along with proximity to markets. On the other hand, the availability of skilled labour, transportation costs and housing were ranked as the most unfavourable factors affecting the operation of their plants.
- (l) Skilled labourers are in short supply in Huron and Perth counties, where industry has been established most recently. Many of the workers are unskilled and have not yet fully oriented themselves to production procedures in industry. As a result, labour turnover, particularly in Huron County, is higher than would be desired.

4. Mining and Quarrying

- (a) The Midwestern Region accounts for almost 40 per cent of the Province's salt production. Production is centred in Goderich in Huron County.
- (b) In dollar value, structural materials, i.e. sand and gravel, are the Region's most important group of mineral products valued at \$22.8 million in 1965.

- (c) In 1965, 22 per cent of the total output of cement in Ontario came from the Midwestern Ontario Region, particularly from St. Marys in Perth County.

5. Construction

- (a) The Midwestern Region's construction industry experienced a notable expansion during the 1957-1966 period as reflected in the value of building permits which rose from \$27.5 million in 1957 to \$151.5 million in 1966.
- (b) In 1966, over 90 per cent of the total value of building permits were issued in Waterloo and Wellington counties. Five centres: Kitchener, Guelph, Waterloo, Galt and Stratford accounted for approximately 80 per cent of the value of building permits.
- (c) One of the major reasons for the significant increase in the value of building permits has been institutional and government construction.

6. Trade

- (a) The wholesaling function does not appear to be particularly strong in Midwestern Ontario, with total sales representing but 3.7 per cent of total wholesale sales in Ontario. This is most probably due to the wholesaling influence of nearby Toronto and London.

- (b) A rising population together with growing disposable incomes and a diversified economic base have contributed to increases in retail trade in the Midwestern Region. In 1966, sales amounted to nearly \$499 million compared to \$334 million in 1961. The greatest increases have been in Waterloo County, the most populous area.
- (c) The dominance of certain centres providing retail functions for their own population and that of the surrounding area is quite pronounced. In terms of sales per trade area population, Listowel, Exeter, Kitchener-Waterloo, Galt-Preston-Hespeler, Guelph, Stratford and Goderich show the dominant influence.
- (d) In 1966, receipts in selected services¹ were approximately \$66 million, representing a 61 per cent increase since 1961, compared to a 56 per cent increase in the Province generally over the same time period. Expenditures on accommodation and meals accounted for over 50 per cent of total receipts in the selected services.
- (e) Within the "Golden Triangle" there appears to be a structuring of functions. Kitchener is the dominant

¹Selected services include the following groups: amusement and recreation, business services, personal services, repair services, hotel, tourist camp and restaurant and miscellaneous services.

wholesaling centre, although significant increases are apparent in Galt and Preston, possibly as a result of their closer proximity to Highway 401. Kitchener and Guelph appear to be equally strong as service centres. Waterloo had the greatest percentage of its trade activity in the retail sector and has demonstrated significant increases between 1961 and 1966. This probably reflects the university activity in that centre. Kitchener, however, remained the largest retail centre in the "Golden Triangle," even though in 1966, it accounted for considerably less than half of the total retail sales in this area.

Introduction - Evaluation of the Economic Base

An analysis of the economic base is designed to assist in forecasting population and economic growth. The "export", or "basic" sector of the regional economy consists of those industries or segments of industries which supply a market external to the region. The hypothesis is that these "export" industries initiate and determine the extent of overall regional economic expansion. Growth in a region is initiated by the response of the industries within it to an increase in demand arising from outside the region itself. This, in turn, results in an expansion of local demand for regional goods and services.

The procedure used in this report to calculate the export base is the location quotient approach. This shows the ratio of the percentage of the labour force employed in a given industry in the Midwestern Ontario Region to the percentage employed in that industry in the Province of Ontario. Generally, a ratio of 1.00 indicates that the region is self sufficient in that particular industry; that is, it neither imports nor exports the commodity in question. A location quotient greater than 1.00 indicates that the region is an exporter of the commodity.

Table 4.1 contrasts the location quotients for 1951 and 1961 using labour force data. The Midwestern Ontario Region showed a relatively greater concentration of its labour force in the

TABLE 4.1

LOCATION QUOTIENTS, BY COUNTIES, MIDWESTERN ONTARIO REGION, 1951 AND 1961

Industry Division	Huron		Perth		Waterloo		Wellington		Midwestern Region	
	1951 (1)	1961 (2)	1951 (3)	1961 (4)	1951 (5)	1961 (6)	1951 (7)	1961 (8)	1951 (9)	1961 (10)
Agriculture	3.89	4.82	2.84	3.64	0.66	0.74	2.13	2.32	1.84	2.07
Forestry	0.05	0.14	0.06	0.14	0.03	0.00	0.06	0.00	0.04	0.05
Fishing and Trapping	1.51	2.22	-	-	0.33	-	0.06	-	0.26	0.33
Mining, Quarries and Oil Wells	0.05	0.51	0.04	0.06	0.04	0.06	0.09	0.00	0.05	0.13
Manufacturing	0.35	0.43	0.88	0.93	1.64	1.62	1.06	1.12	1.19	1.22
Construction	0.85	0.79	0.83	0.83	0.87	1.03	0.80	0.92	0.84	0.95
Transportation, Communication and Other Utilities	0.51	0.74	0.84	1.02	0.54	0.59	0.65	0.64	0.61	0.68
Trade	0.71	0.72	0.88	0.87	0.85	0.97	0.83	0.84	0.83	0.89
Finance, Insurance and Real Estate	0.39	0.44	0.58	0.58	1.13	1.12	0.57	0.58	0.80	0.82
Community, Business and Personal Service Industries (1)	0.66	1.18	0.63	0.76	0.63	0.80	0.86	1.05	0.17	0.84
Public Administration and Defence (2)	n.a.	1.98	n.a.	0.38	n.a.	0.38	n.a.	0.57	n.a.	0.64
Industry Not Stated	1.68	0.60	0.75	0.83	0.51	0.69	0.73	0.83	0.78	0.73

n.a. Not available.

(1) Includes Public Administration and Defence in 1951.

(2) Included in Services in 1951.

Note: The Location Quotient is a statistical measure of the relative concentration of a particular industry in an area. It may be derived as follows:

Proportion of workers in major industrial group A in a region, county or urban centre.

Proportion of workers in major industrial group A in a region or province.

Ratios greater than 1.0 would indicate that the industry is "basic" or "export" oriented; ratios smaller than 1.0 would indicate that the industry is "non-basic" and serves the local market.

Source: Calculated from, Canada, Dominion Bureau of Statistics, Census of Canada, Labour Force, 1951, 1961 (Ottawa: Queen's Printer).

agricultural and manufacturing sectors than the Province of Ontario, with location quotients above 1.00 in both 1951 and 1961. Huron, Perth and Wellington counties all showed the agricultural sector as one of the main export industrial groups of their respective counties. In addition, the location quotient increased in the agricultural sector in all four counties between 1951 and 1961, showing the Region's continual importance in Ontario's agriculture.

The manufacturing sector is "basic" in only Waterloo and Wellington counties, with the former displaying its dominance as a manufacturing area.

With respect to individual counties, Huron shows a high location quotient in the fishing and trapping and the public administration and defense sectors. The former employs a relatively small number of people (43 in 1961) while the latter is partially reflective of the military establishments in Huron County during this period of time. Also, the respective shares of the labour force in these industries have been steadily declining.

The community, business and personal service industries changed their orientation from non-basic in 1951 to basic in 1961, reflecting the growing importance of the service sector in the County's economy.

Perth County shows an orientation similar to Huron County.

The location quotients, however, have higher values approximating 1.00 reflecting a greater degree of self-sufficiency. The County had a location quotient of 1.02 in the transportation, communication, and public utilities sector in 1961. The traditional strength of Stratford as a transportation centre during this period of time largely accounts for this orientation.

Waterloo County, in addition to having a high location quotient in manufacturing, also shows an export orientation in the finance, insurance and real estate sector. This would appear to result from the concentration of insurance companies in Waterloo.

The additional number of industrial sectors showing high location quotients, i.e. construction and trade, reflects the importance of Waterloo County in the Region's economic system.

Wellington County, with a dominant export base in the agricultural sector, showed increased strength in manufacturing activity from 1951 to 1961. The construction and service industries also reflected higher location quotients in 1961. The economic structure of Wellington County reflects a pattern which would place it between Huron and Perth Counties on the one hand and Waterloo County on the other.

Sectoral Analysis of the Economic Base

Having briefly examined the economic base of the Mid-western Ontario Region, this section will give an overview of the development of economic sectors and attempt to isolate potential problem areas. Since agriculture and manufacturing are the major components of both the economic base and its export sector, they will receive prime emphasis. Unless otherwise indicated, most of the tables relating to the following analysis can be found in the Statistical Appendix.

1. Agriculture

While agriculture has been demonstrated to be one of the major components of the export sector in the Midwestern Region, employment opportunities have been declining. During the 1951-1961 decade, over 2,600 persons left the farms for other employment. It would appear that this trend has intensified within recent years as another 4,000 people left the farming community between 1961 and 1966. The greatest exodus is from the farms in the two more agriculturally oriented counties of Huron and Perth.

The acreage in farmland declined during the 1951-1966 period by over 100,000 acres - but this decline is relatively small when compared to the over two million acres of farmland which existed in 1966. Most of the decreases in farmland have occurred

in the more urbanized counties of Waterloo and Wellington. While the Midwestern Region lost 5.1 per cent of its farmland between 1951 and 1966, the provincial total declined by 14.6 per cent.

The number of farms operated in 1966 was 2,850 less than in 1951, but the average size of farm increased during this period of time from 127.5 to 145 acres. The greatest loss in the number of farms was in Huron County which also experienced the largest increase in average size of farm, indicating farm consolidation in the area.

Although there have been declines in the amount of land in agricultural production, the total value of products sold in the Midwestern Region has increased by more than 124 per cent between 1951 and 1966. Moreover, all four counties registered an increase of at least 100 per cent for that time period. Significantly, the corresponding provincial increase was only 76 per cent.

The most significant cash product in the Midwestern Ontario Region and in all four counties is livestock, accounting for 59 per cent of the total value of agricultural products sold in the Region in 1966. Dairy products and poultry and eggs are the two next major cash products, accounting for 17 per cent and 15 per cent respectively, of the total value of agricultural products sold in 1966.

Farm income in Midwestern Ontario appears to be considerably above the provincial average. Table 4.2, for example, shows the percentage of farms whose value of products sold was either less than \$2,500 or greater than \$10,000 in 1961 and 1966. While 20 per cent of all farms in the Midwestern Region earned less than \$2,500 in 1966, almost 36 per cent of farms in the Province were in that category. On the other hand, over 40 per cent of the Region's farms sold products valued at over \$10,000 compared to only 27 per cent of those in the Province generally. On a county basis, farming in Waterloo County would appear to be the most prosperous, for over 50 per cent of the farms there sold products valued at over \$10,000.

Because of the variability of farm income from one area to another, and the need for agricultural planning policies to be responsive to such diversities, an accounting procedure was used to determine the differences in net farm income for each county within the Midwestern Region. The results of these calculations are shown on Table 4.3 and their derivation contained in Appendix B of the report.

It can be observed that all counties of the Midwestern Ontario Region have a return per farm operator which is considerably above the provincial norm. In addition, Waterloo County is significantly above the other counties of the Region. In fact

TABLE 4.2

PERCENTAGE OF COMMERCIAL FARMS CLASSIFIED BY
ECONOMIC CLASS OF FARM, 1961 AND 1966

		Percentage of Farms Whose Value of Agricultural Products Sold Was		Number of Farms
		Less than \$2,500 %	Greater than \$10,000 %	
Huron	1961	27.2	18.3	5,052
	1966	19.7	37.5	4,565
Perth	1961	18.5	21.8	4,122
	1966	15.0	42.6	3,808
Waterloo	1961	26.5	36.1	2,435
	1966	21.6	50.3	2,239
Wellington	1961	30.8	20.0	4,005
	1966	24.8	35.5	3,768
Total, Mid- western Region	1961	25.7	22.4	15,614
	1966	20.1	40.3	14,380
Total, Province of Ontario	1961	42.6	15.8	121,333
	1966	35.6	26.7	109,887

Source: Derived from Statistics in Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Queen's Printer), Table 15 and Table 14.

TABLE 4. 3

FARM INCOME, MIDWESTERN ONTARIO REGION BY COUNTIES AND PROVINCE OF ONTARIO, 1965

	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Ontario</u>
Total Gross Income	58,388,000	52,604,000	40,957,000	47,368,000	1,239,575,000
Total Operating & Depreciation Charges	40,201,000	35,508,000	23,617,000	31,036,000	895,104,000
Total Net Income	18,187,000	17,096,000	17,340,000	16,332,000	344,471,000
6% Assumed Return to Capital	12,211,000	11,130,000	7,952,000	16,458,000	293,048,000
Return to Farm Operators	5,976,000	5,966,000	9,388,000	5,874,000	51,423,000
Total Number of Operators	4,565	3,808	2,239	3,768	109,887
Adjusted Number of Operators (1)	3,790	3,186	1,663	2,814	81,314
Value of Farm Capital	203,516,000	185,508,000	132,530,000	174,304,000	4,884,129,000
Return per Farm Operator (Units) in Dollars	1,309	1,567	4,193	1,559	468
Return per Adjusted Farm Operator (Units) in Dollars	1,577	1,873	5,645	2,087	632

(1) The number of Farm Operators was adjusted by weighting the total number of Farm Operators by total man-years worked.

Source: Regional Development Branch, Department of Treasury and Economics. See Appendix B for the derivation of this Table.

the return per farm operator in Wellington County, the second highest in the Region, is less than half of the return in Waterloo County.

Again, Table 4.4 shows total costs and their components as a percentage of value of agricultural products sold. The "operating and depreciation charges" provide some measure of agricultural efficiency by comparing input costs and output value. These "charges" are lower in Waterloo County than in the other counties, indicating a higher level of efficiency.

A number of factors might explain these county differences:

- (a) Since the return per operator is the residual cost, as shown on Table 4.3, it might be suggested that the labour and/or management applied to the other inputs is more intensive and therefore reaps a greater reward. This could be the result of larger family units working on the farm (an ethnic variable). The income can be distributed to each individual, however, in order to test this hypothesis. Upon doing so, it is discovered that labour income per capita rural farm population in Waterloo County is again more than twice that of Wellington County.
- (b) Another possibility which might account for the high return to farm operators in Waterloo County is the agricultural land capability. From the land capability maps of Chapter VI, it can be observed that there is a far greater proportion of Class 1 agricultural land in Perth than in Waterloo County. Waterloo County does not compare favourably with the others in terms of prime agricultural land. Consequently this factor is discounted as an explanation.
- (c) A final possibility to be considered in explaining this income variation is what may be broadly called marketing facility. Included in this category are accessibility, commodity market size, input market, and marketing institutions. The Kitchener-Waterloo

TABLE 4.4

COST COMPONENTS AS PERCENTAGES OF VALUE OF AGRICULTURAL PRODUCTS SOLD,
MIDWESTERN ONTARIO REGION, BY COUNTY, 1965

	<u>Ontario</u> %	<u>Huron</u> %	<u>Perth</u> %	<u>Waterloo</u> %	<u>Wellington</u> %
Operating and Depreciation Charges	81.3	75.9	74.2	62.8	72.5
Taxes	3.9	3.6	3.2	2.5	3.3
Gross Farm Rent	2.1	1.2	0.9	0.9	0.6
Wages to Farm Labour	10.1	2.8	2.8	4.6	3.2
Interest on Indebtedness	4.4	3.8	3.8	3.5	4.0
Total Machinery Expenses	10.3	9.4	9.9	6.6	8.7
Fertilizer & Lime	5.5	5.7	4.3	3.7	3.7
Other Crop Expenses	2.5	2.5	2.5	2.5	2.5
Livestock Expenses	21.7	28.3	27.9	21.5	27.5
Repairs to Buildings	3.0	2.3	2.4	2.4	2.6
Miscellaneous Expenses	6.7	6.7	6.7	6.7	6.7
Depreciation on Buildings	4.8	3.7	3.7	3.8	4.1
Depreciation on Machinery	6.4	5.9	6.2	4.1	5.4

Source: See Table B (1), Appendix B

conurbation is the Region's prime example of an outstanding marketing facility.

In conclusion, higher labour inputs per operator, better management inputs, and a better marketing facility are considered to be the principal factors which explain the higher farm incomes in Waterloo County.

In order to gain further insight into income disparities in the Midwestern Ontario Region, different types of farming were investigated, e.g. livestock and dairy farming.

Definite patterns can be observed in the raising of livestock; swine are found in greater concentration north of Kitchener-Waterloo; dairy cattle are located to the west, in Perth County; and beef cattle are to the north and northeast of Kitchener-Waterloo as well as in northern Perth and Huron counties. The raising of turkeys has increased substantially in Midwestern Ontario, particularly in northern Perth and northwest Wellington counties.

Only the south and central parts of Huron County and adjoining townships in Perth County grow crops other than feed grains, corn and hay. The largest cash crop here is white bean production.

The Midwestern Region also has some 120 fur farms, producing over 31 per cent of the Province's value of mink pelts in 1966.

In order to obtain an overall picture of the Region's agricultural productivity, an intensity map was developed (Figure

MIDWESTERN ONTARIO DEVELOPMENT REGION



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Dominion Bureau of Statistics, Census of Canada, Agriculture, 1966

Figure 12

12) which shows that the highest production per acre occurs in Woolwich, Wilmot, Waterloo and Pilkerton townships. This is significant as these townships are in the midst of the "Golden Triangle". Since this area also generates the highest farm income and provides a ready market of agricultural produce to the most densely populated area of the Midwestern Region, a case can be made for retaining agriculture in an urban setting.

Although the area is not without its agricultural problems, there are healthy signs of farm consolidation and of greater intensity in the processing of food in the Region. This section has been devoted primarily to a description of the economic base. A discussion of agricultural land capability will be found in Chapter VI.

2. Mining and Quarrying

The Midwestern Ontario Region is an important producer of salt, cement, lime, sand and gravel, accounting for 13 per cent of the total value in the Province in 1961. In 1966, the value of mineral production was approximately \$29 million, an increase of 49.8 per cent from 1961.

Salt is the Region's only mineral in the non-metallic minerals category. The value of production exceeded \$6 million in 1966 compared with \$1 million in 1951 and accounted for almost 40 per cent of the Province's salt production. The industry is centred in Goderich where the Sifto Salt Division of Domtar Chemicals Limited has both a mine and brine well in operation. The mine has been in operation since the beginning of 1960.

Structural materials are the Region's most important group of mineral products with production valued at \$22.8 million in 1965. The largest component of this group is cement, valued at \$11.6 million in 1965 compared to \$3.5 million in 1951. The 1965 value represented 22 per cent of the total output of cement in Ontario. The basis of the cement industry is the large quantities of limestone indigenous to the Region. The St. Marys Cement Company operates a large quarry and clay pit on the outskirts of St. Marys and is one of the largest producers of limestone in Ontario.

Sand and gravel is another important component of structural materials. Production has been expanding in recent years mainly as a result of depletion of high-grade deposits near the larger metropolitan areas of Southern Ontario. Although production occurs in all counties of the Region, the largest workings are located in the Grand River Valley in the Kitchener area and in the Speed River Valley near Guelph.

Mining and quarrying, in themselves, do not contribute substantially to regional employment. In 1961, 348 persons were employed in this sector (0.2 per cent of the Region's labour force), more than half in Huron County.

3. Forestry and Fishing

Both forestry and fishing, as primary resource industries, appear to be relatively small in Midwestern Ontario. In 1961, forestry employed 59 people and fishing only 43.

(a) Forestry

The 1958 Forest Resources Inventory shows that there are approximately 274,600 acres of forested land in the Midwestern Region, comprising some 12 per cent of total land in the Region. Table 4.5 shows the total productive and non-productive forested land by county. Over 70 per cent is located in Huron and Wellington counties, principally in northern Huron and northwest Wellington. Most of the forested land is in hardwood, although Wellington County has a good representation of mixed woods.

In 1965 some 63 per cent or 174,000 acres of woodland were located on farms.¹ The value of forest products sold in the Midwestern Region in 1965 totalled \$253,220, compared to \$364,356 in 1960. This is an average gross income of approximately \$1.45 per acre per year.

¹ Assuming that the Forest Resources Inventory of 1958 was still adequate for 1965.

TABLE 4.5

PRODUCTIVE AND NON-PRODUCTIVE FORESTED LAND AS A PERCENTAGE OF TOTAL LAND AREA IN
THE MIDWESTERN ONTARIO REGION, 1958

TOTAL LAND AREA	Total			FORESTED LAND		Non-Productive	
	Acres (1)	Acres (2)	% (3)	Productive Acres (4)	% (5)	Acres (6)	% (7)
Huron	828,800	105,252	12.7	76,590	9.2	28,662	3.5
Perth	537,600	37,830	7.0	29,102	5.4	8,728	1.6
Waterloo	330,240	35,016	10.6	30,002	9.1	5,014	1.5
Wellington	652,160	96,476	14.8	69,608	10.7	26,868	4.1
Total, Region	2,348,800	274,574	11.7	205,302	8.7	69,272	2.9

Note: For the total land area, D.B.S. Census of Agriculture 1961 statistics have been used. These differ from the figures given by the Ontario Department of Lands and Forests due to difference in methods of data collection.

Source: Ontario Department of Lands and Forests, Forest Resources Inventory, 1958 (Toronto: Queen's Printer)

Much of the forested land is covered by young low-grade stands. In addition, it is scattered throughout the Region and the stands are relatively small. These factors often make it uneconomical for individual owners to carry on forestry operations.

(b) Fishing

Commercial fishing does not play a very significant role in the Region's economy. It is carried out mainly from the ports of Goderich and Bayfield with landings in 1963 amounting to 350,735 pounds from Goderich and 104,761 pounds from Bayfield. Total landings from these two ports accounted for approximately 58 per cent of the total in the Region.

Fishing has declined in importance since 1961 when total landings exceeded 1.2 million pounds. In recent years the fishing industry has suffered from the effects of pollution and the lamprey eel.

4. Manufacturing

The Midwestern Ontario Region has a well diversified economic base. Its location in the heart of Ontario's richest agricultural land and centrally placed between the major markets of the "Golden Horseshoe" and the Windsor-Detroit complex, has led to the establishment and growth of a highly diversified complex of industries. With no major local natural resources other than agriculture, industrial activity in the Region consists largely of secondary manufacturing. With the exception of local farm produce for the food processing industries, most of the raw materials are brought in from outside the Region.

The selling value of goods shipped has grown steadily in the Region and in 1966 exceeded \$1.3 billion, compared with some \$492 million in 1951. During the immediate post-war period, and through the early 1950's, growth of manufacturing output lagged somewhat behind the Ontario average. However, this trend has since reversed and regional growth has more than matched that of the Province as a whole. By 1966, the Region's industrial production stood at 6.8 per cent of the provincial total, compared with a post-war low of 5.7 per cent in 1954.

While the Region's total labour force increased by 20 per cent between 1951 and 1961, manufacturing grew by only four per cent. This moderate growth was primarily accounted for by the larger number of women employed in manufacturing -- 13,535 in 1961

compared with 11,815 in 1951, while the number of men remained virtually unchanged. As a result, the proportion of the Region's labour force engaged in manufacturing dropped from 38.8 per cent in 1951 to 33.6 per cent in 1961. This, however, was higher than the 1961 provincial average of 26.9 per cent, indicating the Mid-western Region's industrial role.

Figure 13 presents an index of manufacturing employment from 1946 to 1967 with the former year representing 100. Perth, Waterloo and Wellington counties all show substantial increases in manufacturing employment, particularly in latter years. Table 4.6 shows actual employment by county for 1961 and 1964 with estimates for 1968. Waterloo County is the dominant manufacturing area of the Midwestern Region, accounting for over 67 per cent of total employment in this sector. Five centres, Galt, Guelph, Kitchener, Stratford and Waterloo have traditionally accounted for over 80 per cent of total manufacturing employment in the Midwestern Region although in recent years this percentage has declined slightly.

While Table 4.6 shows the distribution of employment by county, Table 4.7 shows county employment by industry groups for 1968.¹

¹These data were compiled from statistics contained in the MODA Directory and Scott's Industrial Directory. It differs somewhat from the reporting by the Dominion Bureau of Statistics in that employment was assigned by industry categories. For example, assume that a textile mill also made clothing. Table 4.8 reflects a percentage of total employment in each industry group, while DBS reporting would classify employment in only one industry group, the major employer.

MIDWESTERN ONTARIO DEVELOPMENT REGION INDEX OF TOTAL MANUFACTURING EMPLOYMENT 1946-1967 (1946 = 100)



Figure 13

TABLE 4.6

EMPLOYMENT IN MANUFACTURING, BY COUNTIES
AND MIDWESTERN ONTARIO REGION, 1961, 1964 and 1968

	<u>1961</u>	<u>1964</u>	<u>1968</u>	<u>% Change</u> <u>1961-1968</u> %
Huron	1,841	1,940	2,573	39.8
Perth	5,466	6,828	8,020	46.7
Waterloo	31,300	38,889	47,852	52.9
Wellington	<u>9,028</u>	<u>10,139</u>	<u>12,814</u>	41.9
Midwestern Ontario Region	47,635	57,796	71,259	49.6

Source: Canada, Dominion Bureau of Statistics,
Manufacturing Industries, Sections D, G,
1961, Special Tabulations, 1964.
MODA Industrial Directory, 1969.

Most of the firms in Huron County are relatively small. The major industrial groups which provide employment are the wood, food and beverages, metal and machinery and transportation equipment industries. These industries are responsible for 64 per cent of the employment in Huron County.

The industries that are dominant in Huron County are also generally the major employers in Perth County with some exceptions. The furniture and fixture and rubber industries are important components of the industrial mix in addition to the food and beverages, transportation equipment and the metal fabricating and machinery

TABLE 4.7

SELECTED MANUFACTURING STATISTICS BY INDUSTRY GROUP, MIDWESTERN ONTARIO REGION, 1968.

Industry Group	H U R O N			P E R T H			W A T E R L O O			W E L L I N G T O N			M I D W E S T E R N R E G I O N		
	Number of Firms	Employees	Number of Firms	Employees	Number of Firms	Employees	Number of Firms	Employees	Number of Firms	Employees	Number of Firms	Employees	Number of Firms	Employees	Number of Firms
Food and Beverages	19	252	25	1,096	78	5,279	73	742	195	7,369					
Rubber Industries	4	59	1	725	6	5,010	3	164	14	5,958					
Leather Industries	3	211	1	67	28	3,261	4	205	36	3,744					
Textile Industries	3	26	5	548	34	4,205	7	604	49	5,383					
Knitting Mills	1	32	2	112	11	1,346	3	156	17	1,646					
Clothing Industries	--	--	2	245	13	2,420	4	669	19	3,334					
Wood Industries	6	434	5	55	29	735	11	255	51	1,479					
Furniture & Fixtures	4	110	7	855	55	3,003	13	265	79	4,233					
Paper & Allied Industries	--	--	3	320	6	341	4	285	13	946					
Printing, Publishing & Allied Industries	3	77	3	118	40	218	29	170	75	583					
Primary Metals	1	40	1	21	18	1,269	5	705	25	2,035					
Metal Fabricating	11	239	22	949	143	6,432	39	2,197	215	9,817					
Machinery Industries	7	336	12	782	40	3,992	4	1,061	63	6,171					
Transportation Equipment	8	384	12	1,164	22	3,312	5	504	47	5,364					
Electrical Products	--	--	7	291	21	3,695	16	2,932	44	6,918					
Non-Metallic Mineral Products	5	33	6	268	22	1,024	9	523	42	1,848					
Chemical & Chemical Products	5	141	2	78	13	812	4	183	24	1,214					
Misc. Manufacturing Industries	7	199	7	326	56	1,498	14	1,194	84	3,217					
TOTAL INDUSTRIES	87	2,573	123	8,020	635	47,852	247	12,814	1,092	71,259					

Source: MODA Industrial Directory, 1968. Scotts Industrial Directory, 1968. Ontario Statistical Centre, Special Tabulations, 1968.

industries.

Waterloo County has the greatest industrial diversity and thus provides opportunities in a greater variety of industrial groupings including metal fabricating, food and beverages, rubber, textile, machinery and transportation equipment industries. These industries account for approximately 60 per cent of total manufacturing employment in Waterloo County.

In Wellington County, electrical products and metal fabricating industries are dominant, accounting for 40 per cent of total manufacturing employment.

(a) The Relative Growth Performance of Manufacturing in the
Midwestern Region.

Intra-regional variations in manufacturing can best be understood by a detailed structural analysis of its industrial composition. Trends in employment in the 20 major industrial groups in each of the counties of the Midwestern Ontario Region were therefore compared to those in the Province. The details and analysis of this growth trend comparison for the years 1961 to 1964 by county and for 1964 to 1968 for the Region as a whole are contained in Appendix D. This section briefly outlines the findings of this analysis.

The rate of growth of manufacturing employment between 1961 and 1968 was faster in the Midwestern Region than in the Province generally. Perth and Waterloo counties had a faster than average rate of growth between 1961 and 1964, while Huron and Wellington counties experienced relatively faster growth in the 1964 to 1968

period.

Table 4.8 shows the fast growing industries in the Mid-western Region by county for the 1961 to 1964 period. Generally, those industries which grew fastest in the Region were the same industries that showed a fast rate of growth in Waterloo County--that is, transportation equipment, miscellaneous, textile and rubber industries, respectively.

The slow growth industries in the Region tend to be resource oriented. They include food and beverages, leather, wood, knitting mills, and paper and allied industries.

The most significant change in the years 1964 to 1968 was found in the paper and allied industry group. Whereas for years earlier, they had been a slow growth industrial group in the Mid-western Region, by 1968, they were growing faster than the average industrial growth rate of both the Region and the Province.

(b) The Manufacturing Survey

The previous discussion indicated the relative growth performance of manufacturing industries in the four counties and the Midwestern Ontario Region as a whole. For planning purposes it is also necessary to have considerably more detail on the structure and dynamics of manufacturing in each urban centre and each

TABLE 4.8

RELATIVE GROWTH OF INDUSTRIES OF THE MIDWESTERN ONTARIO REGION, 1961 - 1964

<u>County</u>	<u>Fast Growth</u>	<u>Slow Growth</u>
Huron	Machinery Non-Metallic Minerals	Food & Beverages Leather Primary Metals
Perth	Textiles Machinery Transportation Equipment	Printing, Publishing Knitting Mills Wood Industries Paper & Allied Industries Primary Metals
Waterloo	Rubber Textiles Transportation Equipment Metal Fabricating Electrical Products	Food & Beverages Leather Knitting Mills Wood Industries Paper & Allied Industries
Wellington	Tobacco Furniture & Fixtures Transportation Equipment Non-Metallic Minerals Miscellaneous Industries	Clothing Paper & Allied Industries Rubber Leather Printing, Publishing

Source: See Appendix D

industrial sector of the regional economy. A survey of manufacturing was therefore carried out by the Regional Development Branch in the fall of 1969 and early in 1970.

This Survey allowed the research teams of the Regional Development Branch to gain a first hand impression of the Region and its problems and to learn the plans of a major part of the private sector of the Region concerning its future growth. The Regional Development Program involves a working partnership between the Government of Ontario and the people of the Region and significantly, involves a closer coordination of plans of the private sector and those of local municipalities with those of the Government of Ontario.

The Survey was also designed to satisfy the following purposes:

- (i) to understand the major locational determinants of manufacturing within an urban and regional context, in order to determine the potentialities of given sub-regions for attracting new industry in the future.
- (ii) to determine the relationship between manufacturing industries and regional resources and land use.
- (iii) to understand the key relationship between transportation costs, transport mode and manufacturing growth in the Region.
- (iv) to derive some knowledge of the role of anticipated

technological changes in the manufacturing sector as a whole, and for different industry types.

- (v) finally, to obtain primary data on journey-to-work patterns in order to ascertain the spatial influence of each urban centre in the Region and thus determine the degree to which manufacturing industries offer employment opportunities to people in the trading areas of centres; and to collect data on the inter-regional flows and impacts of manufacturing as a whole on the other regions in the Province and the rest of the world (mainly other parts of Canada and the United States).

A discussion of the sample design and its validity is presented in Appendix I.

Labour Force Skills Figure 14 shows the male-female composition and various skill levels of the manufacturing sector by county. These breakdowns are based on the sample survey. The two more industrialized counties of Waterloo and Wellington each have a higher percentage of male employees in the skilled categories than in the Region generally, while Huron, the least industrialized county, has the smallest percentage. Huron County also has the highest percentage of unskilled people. Generally speaking, the female labour force is concentrated in the production processes and consequently includes

MIDWESTERN ONTARIO DEVELOPMENT REGION

EMPLOYMENT IN MANUFACTURING, MALE-FEMALE COMPOSITION, 1968



EMPLOYMENT IN MANUFACTURING, LEVEL OF SKILL, 1968



few skilled people. Most of the female labour in Waterloo and Wellington counties are classified as semi-skilled, while the greater proportion in Huron and Perth counties are unskilled.

Greater insight into the nature of labour force skills can be obtained from Figure 15, which shows the regional pattern by industrial groupings.

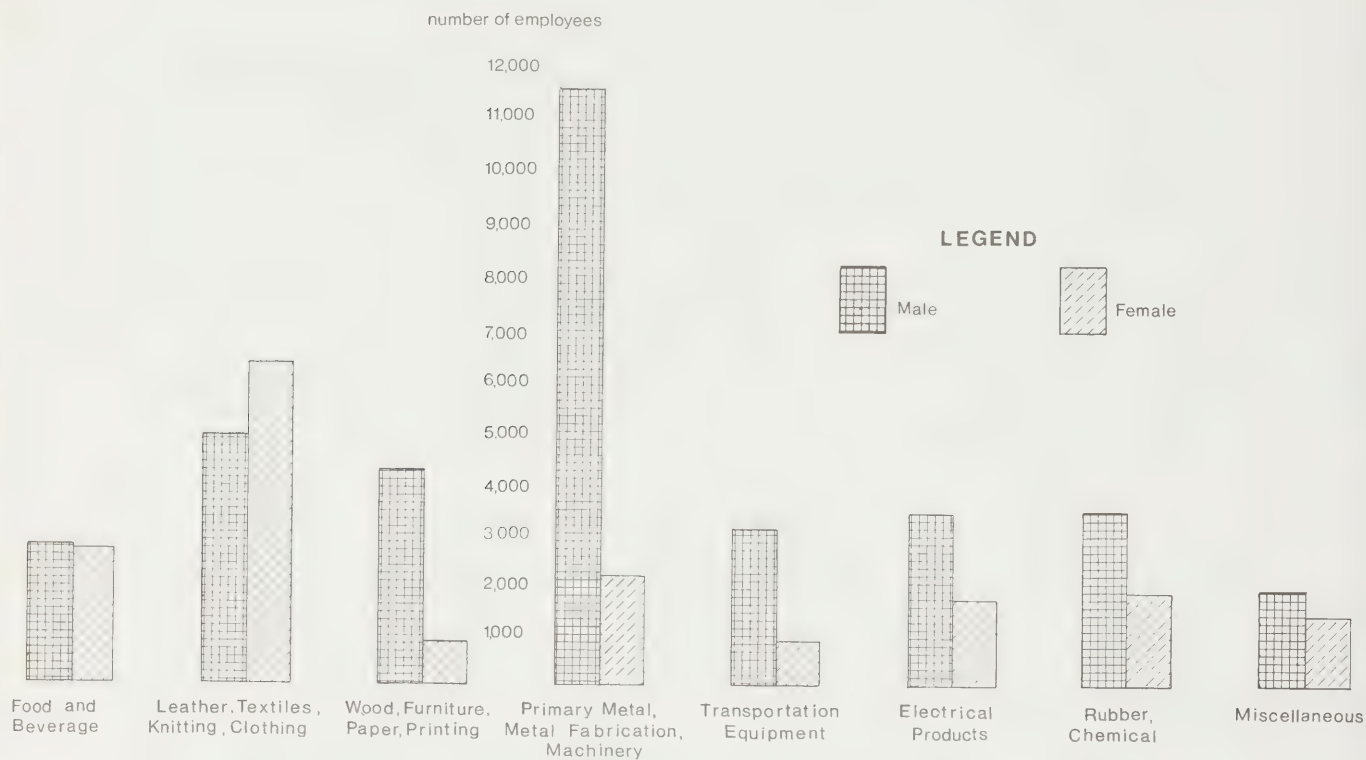
The food and beverage industry has a high concentration of unskilled people, particularly within the female component where some 95 per cent of the women in this industry are unskilled. In contrast, the leather, textile, knitting and clothing industries employ a high percentage of semi-skilled people in both the male and female components.

The major employers in the Region, the primary metal, metal fabrication and machinery industries, use a high proportion of male workers who are predominately skilled and semi-skilled people. The only other industry requiring this degree of skill is the electrical industry.

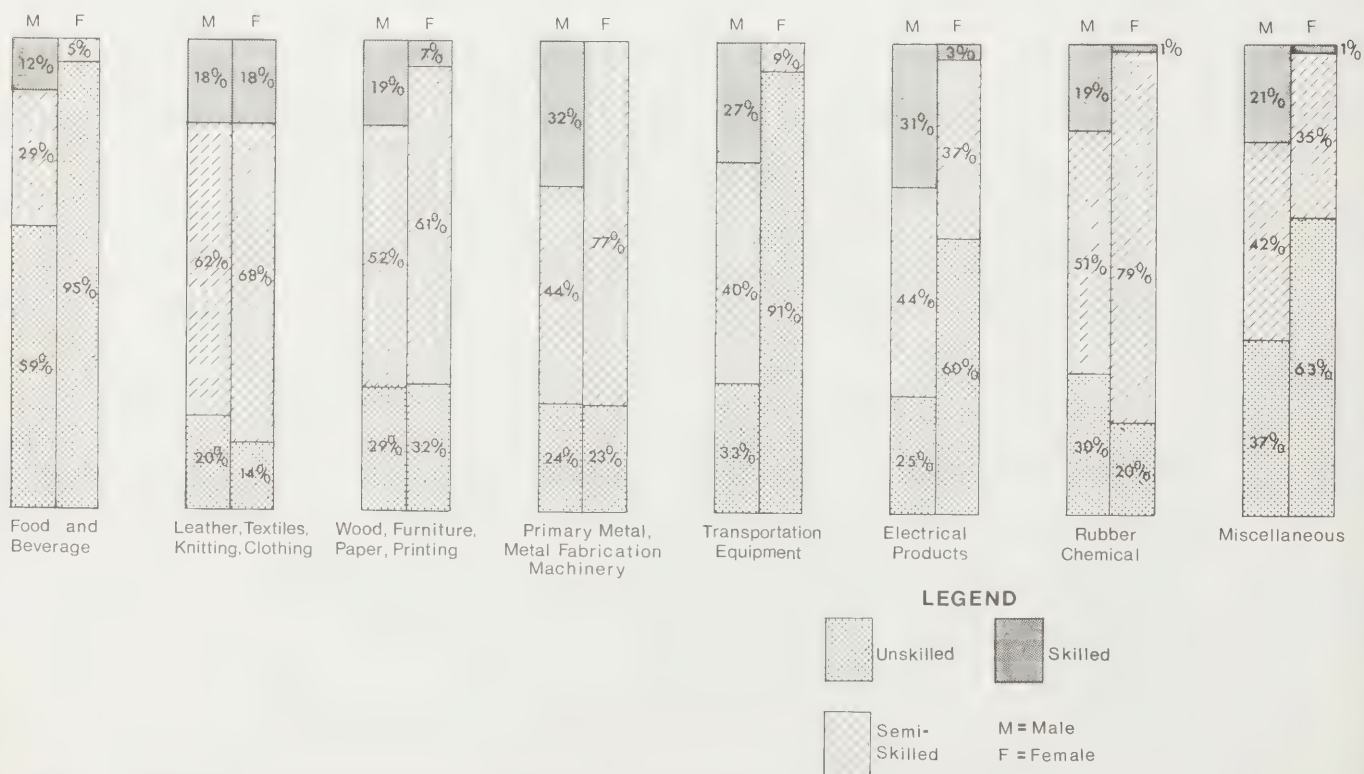
The food and beverage, leather, textile, knitting and clothing industries are the dominant female employers, while the wood and furniture, primary metal, metal fabricating, machinery and the transportation equipment industries are the dominant male employers.

MIDWESTERN ONTARIO DEVELOPMENT REGION

EMPLOYMENT BY INDUSTRY GROUPS, 1968



SKILL LEVELS OF EMPLOYMENT BY INDUSTRY GROUPS, 1968



All four counties in the Midwestern Region showed increases in both production and administrative employees between 1961 and 1968. The percentage change in the number of production workers was fairly consistent with that of administrative employees for all counties except Huron. In Huron County the growth of administrative staff was greater than that of production workers between 1961 and 1968. The food and beverage industry may be largely responsible for this variation as it has shown a greater percentage increase in administration within the industry. It also makes greater demands of seasonal labour.

Seasonality of Employment The seasonal or monthly employment fluctuations are influenced by many factors. These include the degree of urbanization or rurality of an area; the quality of labour available; the industrial location within the Midwestern Region; the internal and external demand of the Region's products; labour unrest and vacation periods; and the nature of the product, i.e. perishable foods.

Table 4.9 shows the monthly fluctuations of the labour force by county and for the Province of Ontario generally for the year 1968. The average employment for the year is equal to 100.

Although there are differences in degree of fluctuation, the monthly variations are generally similar in the counties, the Region and the Province. The month of November is the peak

TABLE 4.9

EMPLOYMENT INDEX BY COUNTY, MIDWESTERN ONTARIO REGION

AND PROVINCE OF ONTARIO, 1968

<u>Month</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>	<u>Province of Ontario</u>
January	91.2	103.2	99.5	99.2	99.5	97.6
February	92.7	101.3	102.1	97.5	98.5	95.7
March	93.7	96.8	98.2	98.2	97.8	96.8
April	94.5	99.7	99.2	98.7	98.9	98.0
May	94.6	99.9	101.3	99.8	100.5	99.8
June	99.2	99.2	97.4	101.4	98.4	100.4
July	108.3	95.9	94.7	99.7	96.5	98.8
August	99.2	97.9	101.7	101.4	100.9	102.0
September	113.2	98.6	101.7	101.5	101.9	102.8
October	102.1	101.9	102.0	101.8	101.9	102.9
November	120.6	103.3	103.7	101.5	104.3	103.4
December	90.3	102.5	101.9	99.3	100.9	101.7

Sources: Field Survey, 1969-1970. Regional Development Branch.

Canada, Dominion Bureau of Statistics, Employment And Average Wages And Salaries,
Monthly Bulletins, 1968.

employment month in the Province as well as in the Region. However, there are variations in the months which provide the least employment. In Perth and Waterloo counties, July has the lowest index perhaps indicative of the vacation period, while in Huron and Wellington counties as well as in the Province generally, the winter months of January and February display the lowest index. This may reflect the industrial mix in the counties. Wellington County displays the most constant monthly employment pattern in the Midwestern Region, while Huron County has wide fluctuations, especially from July to December. The seasonal demands of the food and beverage, and transportation equipment industries could well be contributing factors to this fluctuation. Another factor which may be of equal significance is that Huron County is just beginning to experience an upsurge in industrial activity (e.g. the industrial park at Centralia) after being basically a rural oriented economy. As a result, the wide fluctuations that were experienced in 1968 might be the consequence of start-up problems with new industries.

Definite seasonal variances are displayed when monthly employment is examined by industry type. For example, the food and beverage industry has employment highs in July and November, an indication of the peak demands on this group to fulfil the requirements of the summer and Christmas holiday seasons. On the other hand, the transportation equipment industry (mainly automotive),

follows the automotive year of September to September. The peak employment in this group is experienced in the fall, and then has a very slight, but gradual decline until May. There then is a very sharp drop in June and July while this industry prepares for the new automobile models, and by August, employment is again above the regional average.

The wood, furniture, paper, and printing industries are among the most stable industrial groups, so far as yearly employment is concerned, as are the miscellaneous classifications which are not oriented to the seasonal demands of certain industry types.

Employment in the leather, textile, knitting, and clothing industries closely follow the seasonal demands of the retail trades. Consequently, this industrial grouping has employment peaks in spring and fall and lows in summer and winter. Other industrial groupings, such as rubber, chemical, electrical, metal fabricating and machinery industries closely follow the regional average, but they do suffer from noticeable employment dips in June and July, which could indicate some association with and dependence on the automotive industrial complex.

Labour Turnover and Shortages An additional dimension of the labour force is its stability within the economic system. Labour turnover rates were examined for each county and by industrial groupings. In the survey of manufacturing, labour turnover was defined

in terms of replacement employees as a percentage of average annual full-time employment within the last two or three years. Excluded were temporary, part-time or summer help and lay-offs.

Table 4.10 shows the percentage of labour turnover for production and administrative staff in the four counties of the Midwestern Region.

TABLE 4.10

LABOUR TURNOVER, BY COUNTY, MIDWESTERN ONTARIO REGION

AVERAGE OF THE YEARS 1966-1968

	Production Turnover %	Administrative Turnover %
Huron	58	9
Perth	32	9
Waterloo	40	15
Wellington	29	20

Source: Field Survey, Regional Development Branch, 1969-1970.

The rural counties of Huron and Perth show a lower administrative turnover rate than do the more urbanized counties of Waterloo and Wellington. This may be the result of the strong industrial base of the "Golden Triangle" which allows for greater freedom of movement. On the other hand, the county showing the

highest administrative turnover, Wellington, also has the lowest production turnover.

Huron County's production turnover rate was the highest in the Midwestern Region, approximating 60 per cent. As discussed above, this may very well be attributable to Huron County's new experience in industrial activity and problems in adjusting to this new industrial base.

The turnover rates by industrial groupings add further insight. They can be classified into two distinct categories. The first category is comprised of food and beverage; leather, textiles, knitting and clothing; primary metals, metal fabricating and machinery; electrical products; and chemical and rubber industries. In this group, production turnover is between 39 to 45 per cent and administrative turnover between 13 to 21 per cent. The second category is composed of wood, furniture and fixtures; paper, printing, publishing and allied products; transportation equipment; and miscellaneous industries. In this group, production turnover was less than in the first category, being between 30 and 35 per cent and administrative turnover between 6 and 11 per cent. There appears to be a direct relationship between turnover rates and the male-intensive versus the female-intensive industries. Those industries which employ a high percentage of female labour also have the highest turnover rates.

Generally, labour turnover occurs mainly in the unskilled categories and the younger age groups.

The survey also asked if labour shortages existed and in what job occupations. Table 4.11 is a tabulation of responses (in percentages) of those firms surveyed, stating whether or not shortages existed in the labour pool available to the area.

TABLE 4.11

SHORTAGES BY SKILL TYPES, MIDWESTERN ONTARIO REGION, 1968

	Unskilled		Semi-Skilled		Skilled		Administrative	
	<u>Yes</u> %	<u>No</u> %	<u>Yes</u> %	<u>No</u> %	<u>Yes</u> %	<u>No</u> %	<u>Yes</u> %	<u>No</u> %
Huron	21	78	39	57	26	70	9	87
Perth	39	61	39	52	61	35	26	61
Waterloo	15	81	37	54	61	28	17	70
Wellington	15	69	27	54	54	23	15	62
Region	22	74	36	54	54	36	17	69

Source: Field Survey, Regional Development Branch, 1969-1970.

This table should be related to Figure 14 in order to visualize the effect of the industrial mix in each county and the various levels of skill used within this mix. Huron County utilizes

the fewest skilled people and therefore the shortage of such people is not presently as acute as in the other counties. The manufacturers in the other three counties stated that there were definite shortages in skilled occupations. It is notable that manufacturers in Perth County reported greater labour shortages than did any of the other counties in the Region.

Manufacturers were asked to list those job occupations where shortages were most acute. Those mentioned most frequently included machine operators, welders, textile personnel, machinists, general maintenance people, electricians, mechanics, tool and die makers, cabinet craftsmen and qualified administrative staff.

Comments by the manufacturers regarding factors which influenced labour turnover included the relative position of the labour market at any given time, technological advances, labour-management relations, employee productivity, apprentice programs, seasonality of the related industry and basic job routine.

(2) Sources of Manufactured Inputs and the Distribution of Products

The growth of a given region is related to its capacity to attract industries that produce goods for export to other regions and other parts of the world. Theoretical and empirical findings to date stress the importance of export activity as a determining

factor in regional economic growth. Any region within a specialized economy must import to survive. To pay for its imports it must, in turn, export. Thus a prime sector of regional activity will be the production of goods and services for export.

In economic base analysis certain activities are classified as basic. These comprise the export industries where outputs are determined by forces outside the region. All other industries are classified as non-basic or residuary. The fortunes of these industries are determined by internal forces represented by a multiplier which links the export sector to total regional activity.

This section will examine the nature of flows generated by and within the manufacturing sector so as to ascertain, by industry group, (i) the extent to which given industry types are export-oriented (i.e. basic) as well as to determine the extent and composition of the basic markets, and (ii) to determine the nature of inputs and their sources.

In the survey of manufacturing (described previously) manufacturers were asked to list by dollar value the nature of their manufacturing inputs and sources of origin and the value and destination of their outputs. The data were then aggregated and an inter-regional flow matrix for inputs and outputs developed.

It is important at this stage to emphasize that the matrices were not accurate enough to be applied for forecasting purposes. They are used here only to represent patterns of flows, in the aggregate and by industry groups.¹

Aggregate Markets For the Region as a whole, the spatial picture of output flows is represented in Figure 16. Flows to Central and Southwestern Ontario² (the dominant urban corridor) accounted for over 45 per cent of the total value of manufactured outputs produced in the Midwestern Region. Only five per cent was consumed locally and 25 per cent went to the Central Ontario Region.

The other basic markets involved the major centres in the other provinces which received over one third of all manufactured outputs. Foreign purchasers received only six per cent of the total value.

¹To a large extent the data used in the analysis were derived from the Waterloo-Wellington survey, though, where applicable, data were also utilized from the first survey in Huron and Perth. The flows generated are meant to be only representative. Their validity can be supported by the fact that the Waterloo-Wellington Survey accounted for nearly 80 per cent of total value of outputs of the total sample and 75 per cent of major inputs. Furthermore, these two counties accounted for over 80 per cent of total manufacturing employment in 1968 and 85 per cent of all manufacturing firms in the Midwestern Region.

²Central and Southwestern Ontario include the Niagara, Lake Erie, Lake St. Clair and Midwestern Ontario Regions and the Central Ontario Region.

MIDWESTERN ONTARIO DEVELOPMENT REGION SPATIAL FLOWS OF MANUFACTURING OUTPUT (BY PERCENT OF TOTAL VALUE 1968)

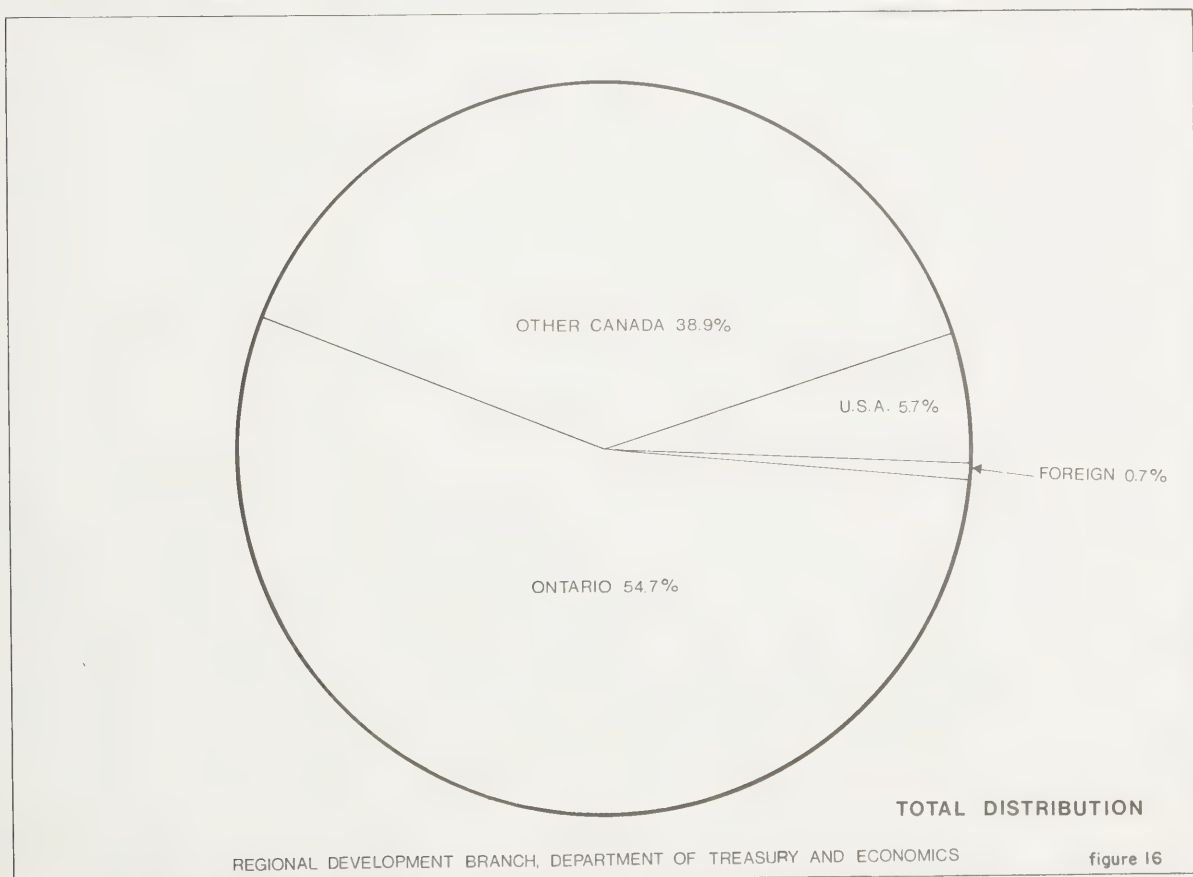
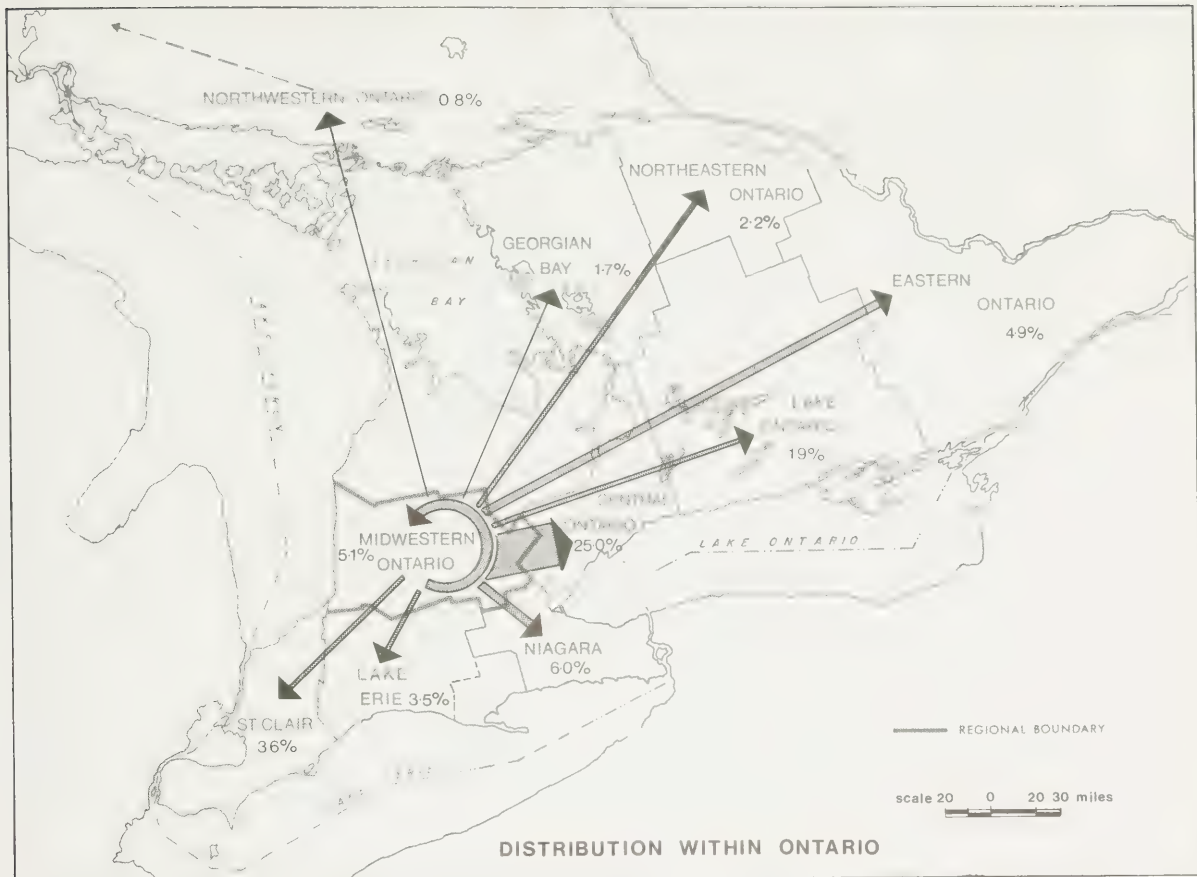


figure 16

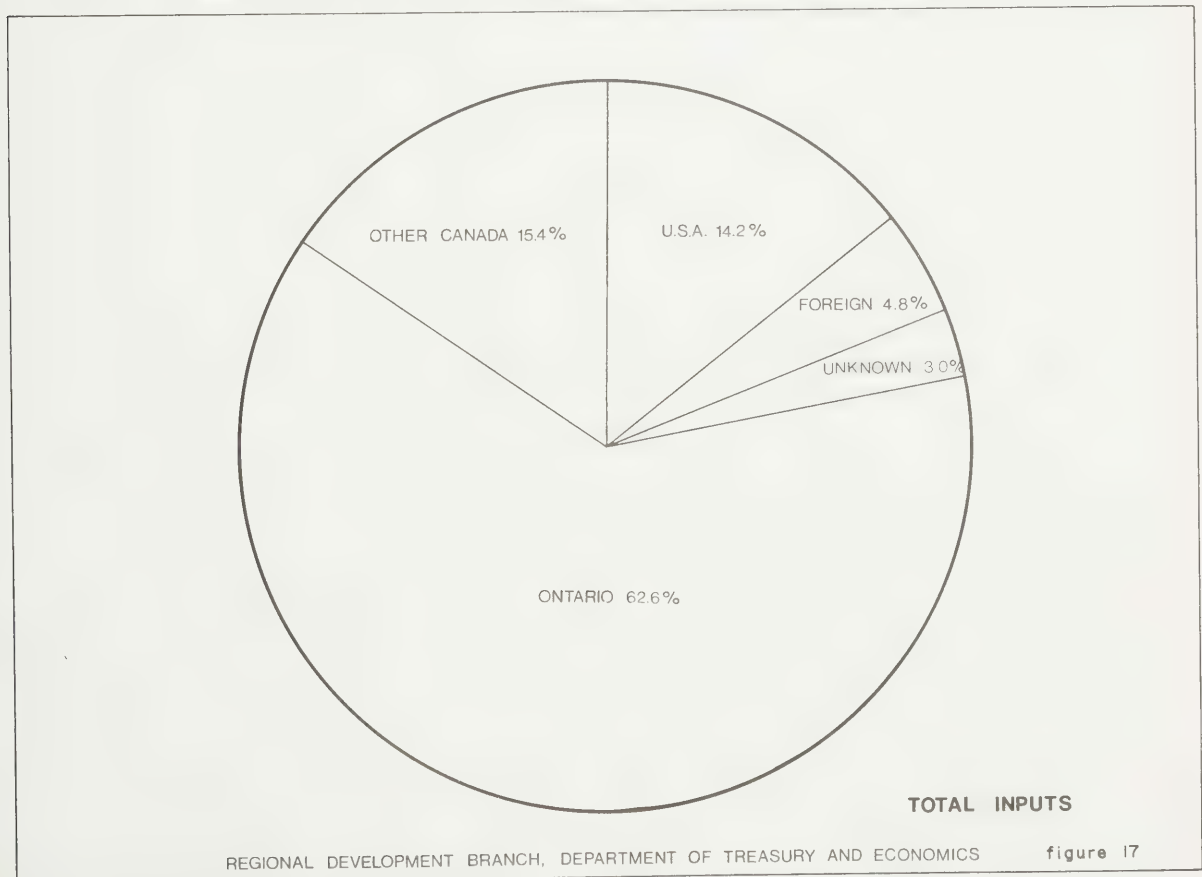
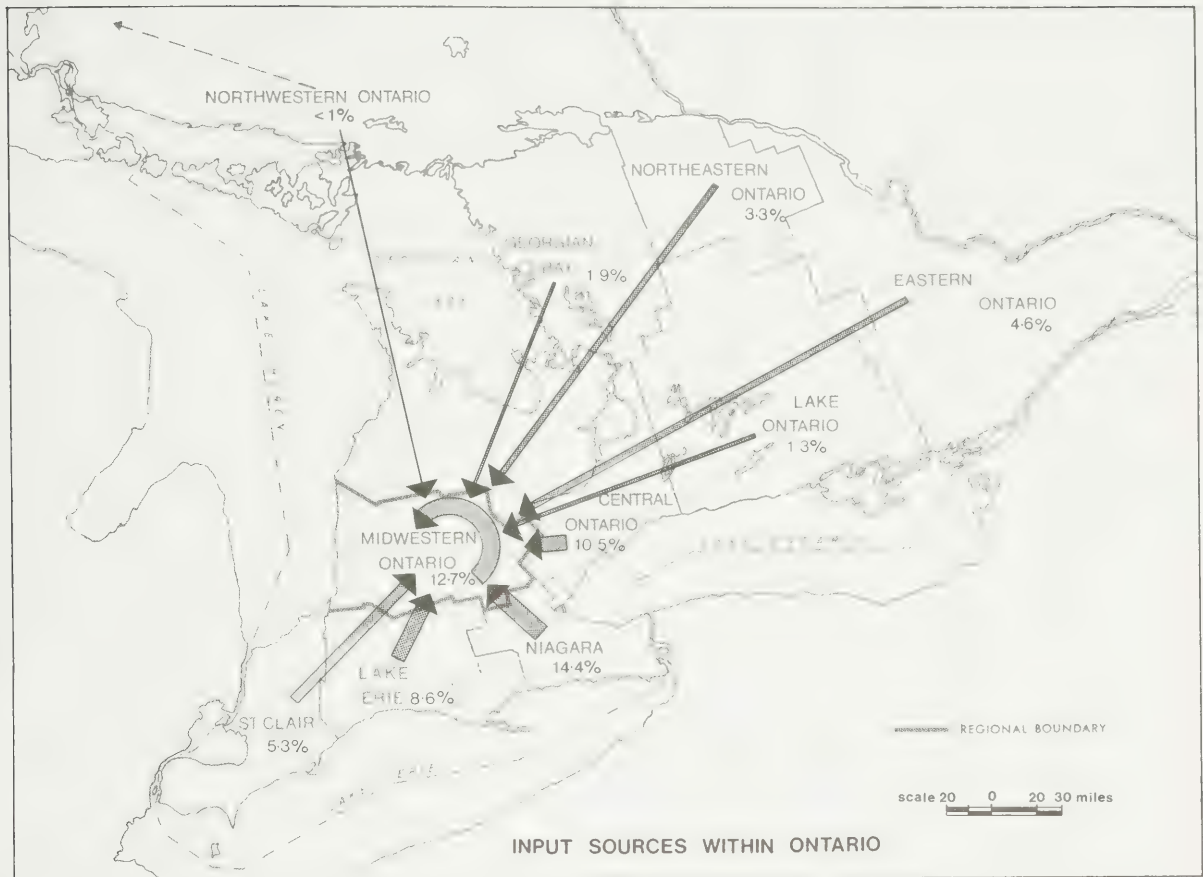
Thus one can see that a significant proportion of all manufactured outputs produced in the Midwestern Region is sent out of the Region, mainly to the urban-industrial corridors of greater market potential. In sum, manufacturing in Midwestern Ontario can be considered a key export-oriented industry (95 per cent exported out of the Region) and as such becomes an important generator of income and employment in the Region. To a large extent the economic viability of the Region's future will depend on the stability of this export activity.

Aggregate Sources of Inputs The flows depicted in Figure 17 indicate that only 13 per cent of all manufacturing inputs are derived locally. Ontario as a whole provides almost 63 per cent. Fifty-two per cent of the total manufacturing inputs emanates from Central and Southwestern Ontario as a whole. The Niagara and Central Ontario Regions provide 25 per cent of all Ontario's inputs into manufacturing in the Midwestern Region.

Of all inputs channeled into the Midwestern Region, 34 per cent is derived from outside of Ontario. Over 55 per cent of this comes from foreign countries.

Sources of Inputs and Market Distribution by Major Industrial Groupings The aggregate pattern presented above clouds the distinct variations which occur by industrial groupings. The following section analyses, by industrial groups, the sources of manufactured

MIDWESTERN ONTARIO DEVELOPMENT REGION SPATIAL FLOWS OF MANUFACTURING INPUT (BY PERCENT OF TOTAL VALUE 1968)



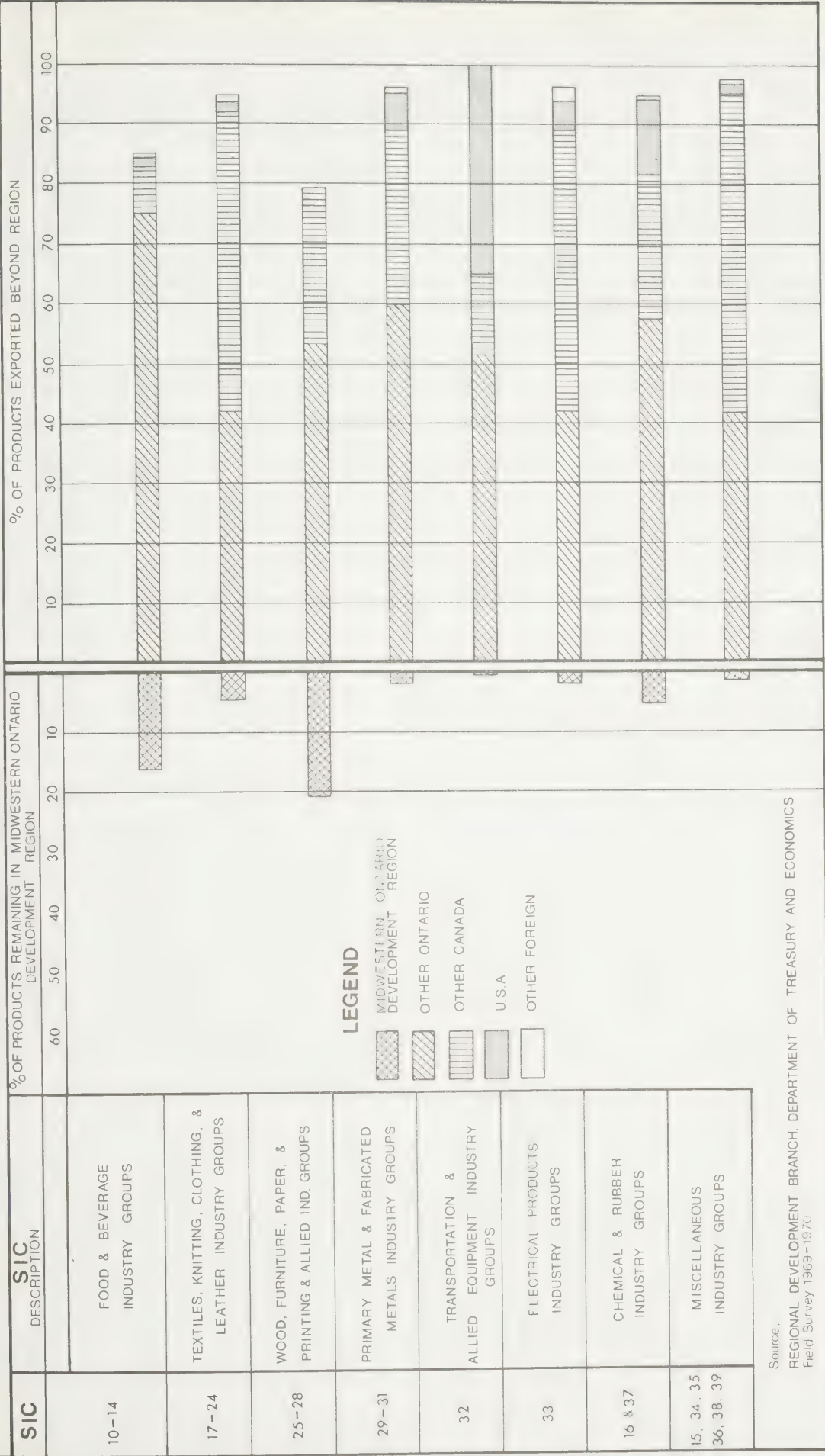
inputs and the market distribution of final products.

(i) Food and Beverage Industry Group Of all industrial products manufactured in the Midwestern Ontario Region, the food and beverage group has the second largest orientation to local markets -- 15 per cent of the total dollar value of outputs (See Figure 18). The market orientation of this group is also reflected in the fact that almost 30 per cent of the total value is exported to the Toronto area with only minimal shares to the rest of Canada (7.8 per cent) and foreign buyers (2.8 per cent). Including local markets, about 90 per cent of all output remains in Ontario.

The industry derives almost 60 per cent of the total value of all its manufactured inputs and raw materials from within the Midwestern Region (See Figure 19). The Prairie Provinces, the St. Clair Region and the Toronto area are significant sources of supply (in total accounting for over 35 per cent of all inputs). Foreign sources are negligible although about four per cent of the inputs is derived from the United States (mainly semi-processed meats, various forms of soybean and frozen fruits and vegetables).

(ii) Textiles, Clothing, Knitting and Leather Industry Groups A significantly large proportion of this industrial group's outputs is distributed outside the Region (almost 95 per cent). The regional share consumed locally (4.6 per cent) is in fact smaller than the regional consumption for local manufacturing as a whole

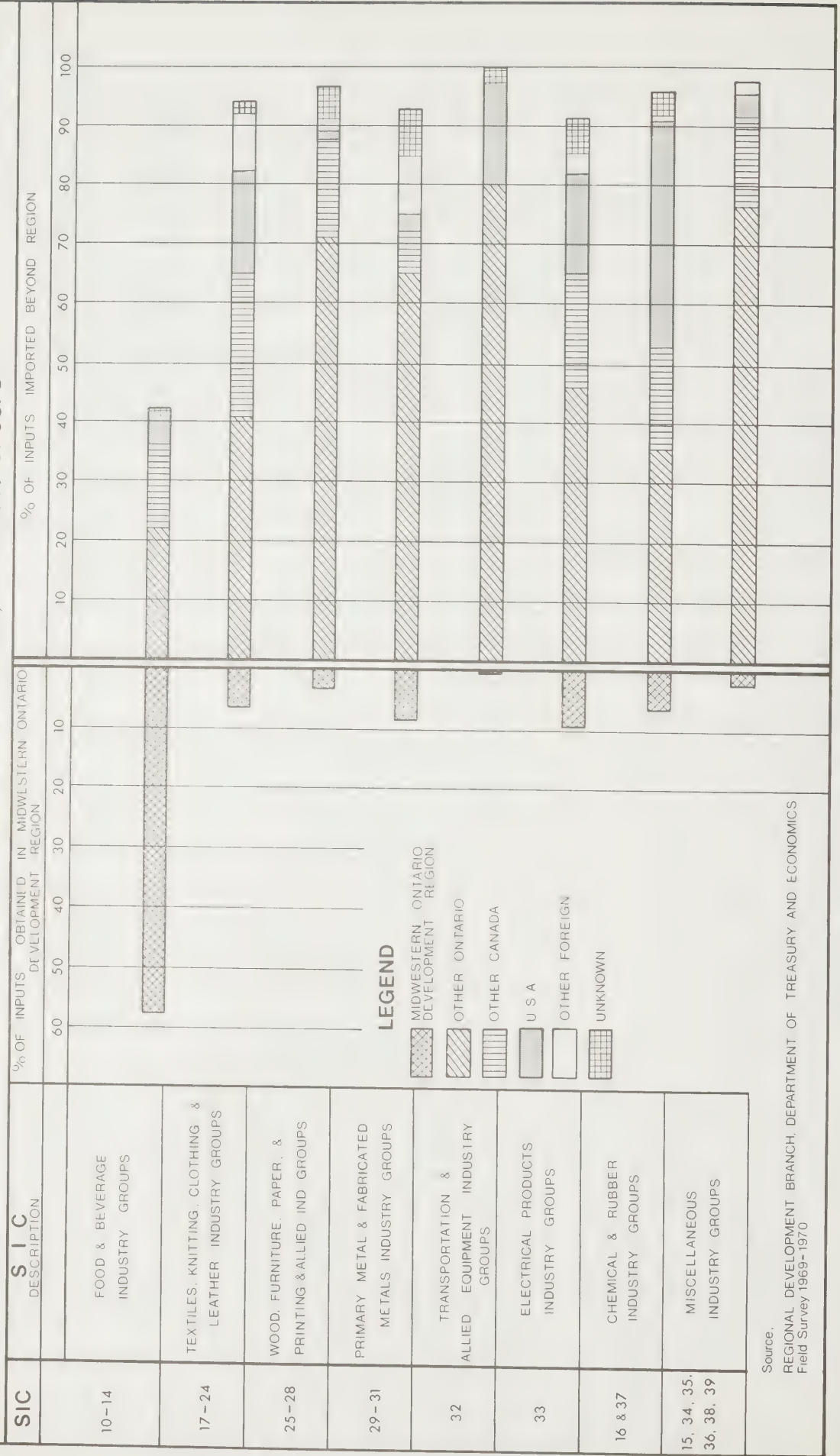
MIDWESTERN ONTARIO DEVELOPMENT REGION DESTINATION OF MANUFACTURING OUTPUTS, BY S.I.C. GROUPS



Source:
REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Field Survey 1969-1970

MIDWESTERN ONTARIO DEVELOPMENT REGION SOURCES OF MANUFACTURING INPUTS, BY S.I.C. GROUPS

figure 19



Source.
REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Field Survey 1969-1970

(5.1 per cent). The largest proportion is exported to other provinces in Canada (51.6 per cent), while Ontario as a whole received about 46 per cent of all outputs. Within Ontario the Central Ontario Region absorbed 21 per cent. Foreign purchases are minimal (approximately 2.4 per cent). The spatial distribution of these flows on an interregional basis is closely correlated with population distribution, suggesting the high degree of market orientation of this industry group. Central and Southwestern Ontario receives, for instance, almost three-quarters of all of Ontario's share.

This industry was traditionally raw material oriented and locational patterns in the Midwestern Region suggest historical parameters. The input commodities and sources are now changing as more synthetic products are used. With this technological shift in the production process, the former raw material orientation of this group will tend to move towards other locational features such as wage levels, labour pools and large markets.

At present the reliance of this industry on Midwestern Ontario for raw materials and manufactured inputs is less than that for manufacturing as a whole (compare 5.5 per cent against 12.5 per cent). A high proportion of inputs (26 per cent) comes from Eastern Ontario (mainly synthetic products like rayon, nylon, etc.).

Inputs are also secured from other provinces in Canada (24.3 per cent) mostly leather components, dyes and associated chemicals and various cotton blends. The United States is the next largest supplier of inputs (17.1 per cent), providing leather products and man-made and synthetic fibres. The Province of Ontario as a whole supplies a little over 46 per cent of all inputs to this industrial group in the Region.

(iii) Wood, Furniture and Fixtures, Paper and Allied Industry Groups This group of industries sells the largest value of products locally (over 20 per cent) as compared to the regional consumption for manufacturing as a whole of 5.1 per cent. Central and Southwestern Ontario receive over 63 per cent of all outputs of which the Toronto area market is the most important (34 per cent). Interregionally there is a close degree of association between sales of this group and the population distribution in Ontario. Other provinces in Canada receive a significant share (25 per cent) and thus provide another important market. The foreign market buys only about seven per cent of all outputs by value, mainly wood products and furniture.

The input pattern varies from the above as only 2.8 per cent of manufactured inputs and raw materials used by this group comes from the Midwestern Region, principally hardware and some forest inputs. Central and Southwestern Ontario provide at least 50 per cent of the

total inputs -- 33 per cent coming from the Niagara Region. Northern sources (i.e. the Northwestern, Northeastern and Georgian Bay Regions) are of some importance to this industrial group, providing at least 11 per cent of the total input value, while other provinces in Canada provide 19 per cent. In both cases, these inputs consist mainly of timber and wood products.

(iv) Primary Metals, Metal Fabricating and Machinery Industry Groups Over 97 per cent of the outputs of this industry group is exported out of the Region. The Toronto to Hamilton development corridor receives almost 40 per cent of all outputs by value -- 28 per cent going to the Central Ontario Region. The most important products are those from iron foundries, boiler and plate works, products of metal stamping and pressing, and wire and wire products.

The other provinces of Canada receive approximately 25 per cent of the total value of outputs, while over seven per cent is exported to the United States and other countries. Almost 60 per cent of the total value of outputs is marketed in Central and South-western Ontario and less than five per cent in the Northern regions and Georgian Bay.

Probably the most significant aspect of this grouping is its heavy reliance on iron and steel as primary inputs. The Hamilton steel works contribute the largest share, by value, of all manufacturing inputs into these industries (41 per cent). A larger than

average proportion is derived from within the Midwestern Region (8.8 per cent) and over 12 per cent is obtained from the North-eastern Ontario Region. There is also a significant input linkage with plants in the Central Ontario Region, which supplies approximately 12 per cent. Another 13 per cent, consisting primarily of specialized iron and steel parts, is derived from foreign sources.

(v) Transportation and Allied Equipment Industry Group

This industry group displays a high degree of interregional transactions for both inputs and outputs. Over 99 per cent of total outputs is distributed outside the Midwestern Region and a similar proportion of inputs is shipped into the Midwestern Region. The largest volume of sales goes to the Toronto Area (44 per cent), mainly to Oshawa and Oakville as motor vehicle parts and equipment. The United States buys over 34 per cent of total value of output, again comprising mostly automotive parts and equipment. Sales to the Lake Erie Region (3 per cent) is also concentrated in motor vehicle parts, plus a minimal amount of agricultural equipment, while the St. Clair and Niagara Regions together receive almost four per cent, mostly in miscellaneous machinery and agricultural equipment. Sales to other provinces in Canada (14 per cent) follow a similar pattern with 70 per cent consisting of automotive parts and the rest comprising miscellaneous machinery and agricultural equipment. The Northern regions purchase negligible amounts from this group.

The input flows for this industry group follow a different pattern with the largest concentrations of inputs coming from steel plants in the Niagara Region (56.5 per cent) and in the Northeastern Ontario Region (23 per cent). The United States is the next largest source (18 per cent) providing mostly aluminum sheets and specialized steel parts.

(vi) Electrical Products Industry Group The industrial products made by this group are so diverse that it is difficult to discuss any single group. The total value of output is relatively high compared with other industrial groupings although the total volume may be small. By far the largest share of output sales (48 per cent) goes to other provinces in Canada; these comprise mainly household radio and television receivers, electrical industrial equipment, electrical wires and cables, and communication equipment parts and components. The Central Ontario Region again absorbs a significant proportion of sales (18 per cent). Elsewhere, there is a fairly well dispersed market in all regions. Ontario as a whole receives almost 45 per cent of all outputs. The foreign market (including the United States) generates a little over six per cent of total sales.

Local sources of inputs into this industrial group (9 per cent) provide the second largest proportion of all the aggregated industry groups under discussion, even though the Midwestern Region's share is still below the proportion of local inputs for manufacturing

as a whole in the Region. The Central Ontario Region provides over 20 per cent of all input values. Central and Southwestern Ontario provide at least 40 per cent; other provinces in Canada, 19 per cent and the United States, 17 per cent.

(vii) Chemical and Rubber Industry Groups The sales of these industry groups which remain in the Midwestern Region are approximately the same as that of all manufacturing output produced in the Region and marketed locally. By far the largest market is the Toronto area (35 per cent) closely followed by other provinces in Canada (27 per cent) and the United States (12 per cent). The Province of Ontario receives almost 60 per cent of the total value of all products of this grouping. Sales to the Ontario market consist principally of rubber footwear, tires and tubes, plastic and synthetic resins, industrial and other chemicals. Sales to the Northern regions (Northeastern, Northwestern plus Georgian Bay) are small, and account for less than four per cent of total value.

Probably the key reason for aggregating these two industrial groups is the fact that most of the inputs to the rubber industries are derived from the chemical industries. Thus input sources are related to the location of the chemical group. The United States provides twice as much of the total value of inputs (38 per cent) as the largest Ontario source (St. Clair Region 18 per cent -- most of which emanates from the Sarnia chemical complex). Other provinces

in Canada make up another important input source, providing mainly industrial chemicals and cotton and tire fabrics. Negligible amounts of inputs are derived from the Northern and Eastern regions.

(viii) Miscellaneous Industrial Groups In this aggregation are included the tobacco industries, the non-metallic minerals and other miscellaneous groups not included in the categories discussed above.

Less than three per cent of the total sales of this group remains in the Midwestern Region. Ontario as a whole receives almost 44 per cent of the total value of outputs -- Central and Southwestern Ontario receiving over 30 per cent. Thus sales in Ontario closely follow the pattern of population distribution. Other major markets are in the other provinces of Canada which receive at least 55 per cent of the total value of outputs. The Northern regions receive less than five per cent and foreign sales are less than one per cent.

The input patterns are distinctly different. Over 60 per cent emanates from the Lake Erie Region with other Canadian provinces providing 16 per cent. Ontario as a whole provides about 78 per cent of all inputs by value, of which the Midwestern Region provides less than one per cent, the Central Ontario Region four per cent, Niagara nine per cent and the Northern Regions (including Georgian Bay) less than three per cent. Foreign sources are also small, less than six per cent, the major proportion of which comes from the United States.

(3) Transport Mode Used in the Shipping of Inputs and Manufactured Products

The manufacturers surveyed were asked to state the mode of transport used for the shipping of each commodity, both inbound and outbound. Although an attempt was made to determine the mode of transport from origin or to final destination, it was often difficult for some manufacturers to establish this. For example, a manufacturer may purchase imports from another manufacturer in Toronto, but not know the primary origin of the commodity. Likewise, the product may be shipped to a central warehouse and the manufacturer not know its final destination. Consequently the data generally reflect the break-of-bulk point.

Table 4.12 shows the transportation mode used in the receiving of inputs and the distribution of the final manufactured product, by different industry groupings. The percentage distribution of transport mode was calculated in terms of the value of product shipped by each mode of transportation.

Over 70 per cent of the products were distributed by truck, with the majority (59 per cent of total value of output) going out by commercial vehicle and only 13 per cent by the manufacturer's own truck. The only other major transport mode used was rail, which accounted for 27 per cent of the total value of product shipped.

TABLE 4.12

TYPE OF TRANSPORT MODE USED IN SECURING AND DISTRIBUTING PRODUCTS, MIDWESTERN ONTARIO REGION, 1968

Industry type	TRUCKING																SHIP				AIR		OTHER	
	Commercial Truck		Own Truck		RAIL		AIR		SHIP		AIR		OTHER											
	Input %	Output %	Inputs %	Outputs %	Inputs %	Outputs %	Inputs %	Outputs %	Inputs %	Outputs %	Inputs %	Outputs %	Inputs %	Outputs %	Inputs %	Outputs %								
Food and Beverage Industry Group	56	42	30	52	10	6	-	*	4	-	-	-	-	-	-	-								
Textiles, Knitting, Clothing and Leather Industry Groups	85	69	4	5	2	24	*	*	9	-	-	-	-	-	-	2								
Wood, Furniture, Paper and Allied Printing Industry Groups	61	37	8	37	23	21	-	-	8	5	-	-	-	-	-	-								
Primary Metal and Fabricated Metals Industry Groups	68	51	18	10	8	38	-	*	6	*	-	*	-	-	-	*								
Transportation and Allied Equipment Industry Group	76	48	1	*	23	51	-	-	-	-	-	-	-	-	-	-								
Electrical Products Industry Group	82	73	1	2	12	24	*	1	4	-	-	*	-	-	-	-								
Chemical and Rubber Industry Groups	46	59	8	12	39	28	*	*	7	*	-	*	-	-	-	*								
Miscellaneous Industry Groups	94	68	3	6	2	25	*	*	*	-	-	*	-	-	-	-								
Total, All Industry Groups	71	59	11	13	13	27	*	*	5	*	-	*	-	*	*	*								

* Less than 1 per cent.

Source: Field Survey, 1969 and 1970, Regional Development Branch.

On the other hand, over 80 per cent of the value of raw materials and manufactured inputs were brought to the manufacturing firms by truck. There is a greater emphasis on commercial trucking than on the manufacturer's own vehicles. Only 13 per cent of the inputs come to the manufacturer by rail. Shipping was also used more intensively for bringing products into the Region (five per cent) than for distribution of products (less than one per cent).

Variations in the transport mode used are quite distinct among industrial groups. For example, the food and beverage industry makes maximum use of trucking, with 86 per cent of the inputs coming to the manufacturing firms by truck and 94 per cent of the final product being distributed by truck. This industry also makes the greatest usage of their own trucks. Little use is made of rail (10 per cent of inputs and six per cent of outputs), except for shipments to and from other parts of Canada, particularly the West. As mentioned earlier, the majority of the inputs are from the Midwestern Region. Further, this industry group's market is in and around the Midwestern Region, another reason for its heavy reliance on trucking.

Another industrial grouping that makes great use of its own trucking facilities is the wood, furniture, paper and allied printing industry groups, particularly in the distribution of products. These industries have a large local market orientation which may make it more economical to service their own customers. Over 20 per cent

of both the inputs and final manufactured products are distributed by rail. Most of the rail shipments are to the Canadian West which is also the source of raw material inputs that come to the manufacturers by rail.

The more rare species of wood are of foreign origin and consequently some eight per cent of inputs is transported by ship. This industry group also has one of the highest percentages of output going to foreign countries, other than the United States. As a consequence, ships are also used to move finished products to these countries.

Two industrial groups, in particular, use rail as a means of transporting goods. The machinery and transportation equipment industries use rail intensively for shipment of final product. Some 41 per cent of total output was shipped by rail. The commodities are generally large and bulky items such as road equipment; graders or automobile parts, such as frames and springs.

In addition to the above industrial groups, the chemical and rubber industries also make greater use of rail than do the other industries. Again this is due primarily to the nature of the commodity and the availability of rail tank cars to transport chemicals.

There appears to have been little significant change in the mode of transport being used between 1961 and 1968. The major change from rail to truck had already taken place by 1961.

In the distribution of products, over 79 per cent of the value of outputs were shipped by truck in 1961, but only 72 per cent in 1968. Less trucking and more rail was being used by the leather, textile and clothing and the miscellaneous industries.

In securing raw materials and manufactured inputs, the reverse of the above was true. Whereas 79 per cent of inputs came in by truck in 1961, 82 per cent came by this mode in 1968. The leather, textile and clothing and the miscellaneous industries were utilizing more trucking to bring in their inputs in 1968 than they were in 1961, and consequently less rail. On the other hand, the wood and furniture industries were utilizing more rail in 1968 (23 per cent) than they did in 1961 (19 per cent).

Generally, the western part of the Midwestern Region (Huron and Perth counties) utilizes more trucking than does the Waterloo-Wellington area. This could be the result of poorer rail services and market serviceability in the western half of the Region.

(4) Locational Aspects of Manufacturing

To the extent that manufacturing is a significant basic industry in the Region, it is worthwhile to examine the determinants of manufacturing location.

All data used in the analysis of the locational aspects of manufacturing in the study area were derived from the field survey.

The specific question posed was:

"Given present economic conditions, please indicate which of the following factors are (1) favourable (2) unfavourable (3) neither favourable nor unfavourable for the continuing operation of the establishment at this location."

The factors referred to came under the following headings:

- (a) Accessibility and costs of transportation;
- (b) Locational orientation in terms of (1) natural resources (2) manufactured inputs and (3) markets, both local and regional;
- (c) The availability of labour;
- (d) The attitude of and relationships with trade unions;
- (e) The structure of wage rates;
- (f) The provision of infrastructure including water, sewage, power and land for plant;
- (g) The compatibility of the local, provincial and federal tax structures and the incidence of incentives;
- (h) The availability of business services, cultural and recreational facilities;
- (i) The adequacy of various types of housing.

Analysis of the response patterns from the survey focuses on structural-spatial relationships utilizing a crude weighting of the ranked responses. The structural analysis involves the industrial groupings discussed in the above section on market distributions with aggregations occurring in those groups with significant commonality

of manufactured inputs or raw materials. The spatial analysis utilizes nine sub-regions which are, in essence, journey-to-work zones focusing upon a major urban centre(s) with final boundaries generalized to township boundaries (See Figure 20).

Locational Factors - Spatial Aspects Tables 4.13 and 4.14 rank the locational questions by sub-regions and for the Midwestern Region as a whole. Total costs of transportation were considered quite unfavourable for the Region generally and especially for the sub-regions focusing on Exeter, Mitchell and Goderich (I, II, IV). Yet accessibility to transportation, especially highways and rail services were quite favourable. Only in sub-regions III, IV and the northern part of Wellington County were highways, railways and air services considered inaccessible (which probably contributes to the unfavourable cost of transportation), though manufacturers in the Goderich and Stratford areas complained of poor air service.

Transportation studies might concentrate, therefore, on the adequacy of highways for the flows of manufacturing inputs and outputs, and on the structure and regional variation of freight costs associated with this.

The system of air services in the area for the movement of manufacturing inputs and outputs should be examined in the light of future technological changes and potential reduction of costs of air transport vis a vis road.

MIDWESTERN ONTARIO DEVELOPMENT REGION

JOURNEY-TO-WORK ZONES SHOWING CENTRES OF EMPLOYMENT

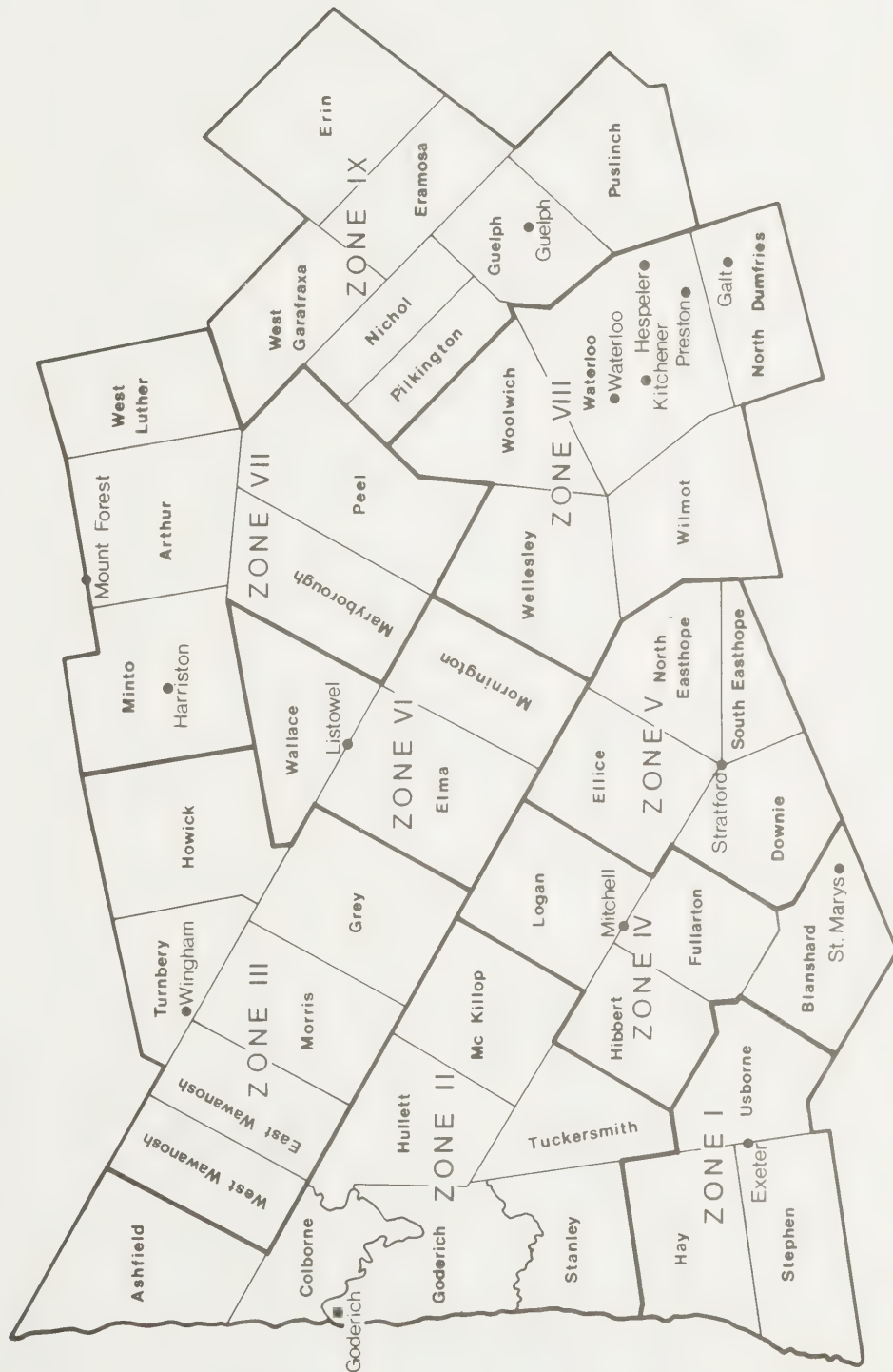


TABLE 4.13

RANKED LOCATIONAL FACTORS FOR MANUFACTURING, FAVOURABLE ASPECTS, MIDWESTERN ONTARIO REGION AND SUB-REGIONS

	Total Midwestern Region	Sub- Region I	Sub- Region II	Sub- Region III	Sub- Region IV	Sub- Region V	Sub- Region VI	Sub- Region VII	Sub- Region VIII	Sub- Region IX
Proximity to good highways	1	1	1	5	6	2	2		2	6
Proximity to railway services	3	3	7		5	2	3		4	
Proximity to air services					7					
Proximity to water transportation										
Costs of transportation										
Proximity to natural resources										
Proximity to sources of manufactured inputs	7		9		1			5		
Proximity to markets	2	3	7		2	8	3	3	3	7
Availability of skilled labour							1			
Availability of unskilled labour	8		2		7					
Attitude of trade unions	9	8	3	5	4	8		3	8	3
Structure of wage rates		2		1	2		6		5	3
Development of utilities and services										
Water services	5	7		5		5	6	5	6	8
Electric power	6	3		5		6	6	5	5	8
Sewage disposal	4	6	10	5		7		5	7	8
Availability of land suitable for plant and availability of plants	10	9	6	4		1		1		1
Tax structure										
Local tax structure and incentives		10		3		10				2
Federal and Provincial tax structure				2						5
Availability of business services										
Cultural and recreational facilities			5			4	4		8	
Adequacy of housing										
Rental accommodation			4				6			
Owner accommodation (less than \$15,000)										
Owner accommodation (\$15,000 or more)										

Source: Field Survey, 1969 and 1970, Regional Development Branch.

TABLE 4.14

RANKED LOCATIONAL FACTORS FOR MANUFACTURING, UNFAVOURABLE ASPECTS, MIDWESTERN ONTARIO REGION AND SUB-REGIONS

	Total Midwestern Region	Sub- Region I	Sub- Region II	Sub- Region III	Sub- Region IV	Sub- Region V	Sub- Region VI	Sub- Region VII	Sub- Region VIII	Sub- Region IX
Proximity to good highways										
Proximity to railway services	5		6			7		2		
Proximity to air services										
Proximity to water transportation	2	2	2		2				5	
Costs of transportation										
Proximity to natural resources										
Proximity to sources of manufactured inputs		4	3	3 2	5	7		1		1
Proximity to markets										
Availability of skilled labour	1	1	1	1	1	1			1	
Availability of unskilled labour		3	4	5		2				
Attitude of trade unions									2	
Structure of wage rates										
Development of utilities and services										
Water services			7							
Sewage disposal					5		2			
Availability of land suitable for plant and availability of plants					3		1			
Tax structure										
Local tax structure and incentives	4		8		3				4	
Federal and Provincial tax structure										
Availability of business services										
Cultural and recreational facilities		5	5	4	4					
Adequacy of housing	3				3					2
Rental accommodation										3
Owner accommodation (less than \$15,000)										
Owner accommodation (\$15,000 or more)										

Source: Field Survey, 1969 and 1970, Regional Development Branch.

The responses to the question on proximity to natural resources varied considerably. Sub-region IV rated this as quite favourable while sub-region II rated it poorly. Greater insight into natural resource orientation will be provided by the next section which discusses the structural aspects of location by industry type.

Locational orientation to manufactured inputs, depends upon proximity to the Canadian manufacturing belt as defined by Kerr and Spelt.¹ It has been estimated that approximately 37 per cent of all manufacturing inputs in the Midwestern Ontario Region emanates from the Ontario section of this belt. If the proportion that comes from the extension of this belt into the United States is added, its impact is significantly greater.

Exceptions to this pattern emerge for sub-region V (the Stratford area) and IV where access to these inputs is on the lower end of the favourable ranking scale. Since the impact of the developing Toronto to Stratford urban corridor² with its concentration of

¹Kerr D. and J. Spelt, "Some Aspects of Industrial Location in Southern Ontario," Canadian Geographer, No. 15 (1960) pp 15-25. This reference specifically refers to the definition of the Ontario portion of this belt.

²This corridor is comprehensively documented in Russwurm, L.H., The Development of an Urban Corridor System - Toronto to Stratford Area, 1941-66. Report submitted to the Regional Development Branch, Department of Treasury and Economics, September, 1969.

new manufacturing growth will alter this pattern in the future, the ratings given for this sub-region may be only temporary. All sub-regions in Huron County experience relative inaccessibility to sources of manufactured inputs. Probably the key reason for this is their relative distance from existing urban-industrial corridors and easy access routes.

This belt also influences orientation to markets in the sense that these broad corridors are the areas of greatest market potential. The relative location of the Midwestern Region as a whole gives it one of the highest ratings for proximity to markets. At least 50 per cent of all manufacturing outputs produced in the Region have been estimated as going to this belt. Of this figure, at least 43.7 per cent flows to Central and Southwestern Ontario.

The one general problem affecting manufacturing location in the Region, is the relative unavailability of skilled labour. Only sub-region VIII (Waterloo County) finds that skilled labour is in adequate supply. This is explained by the high degree of urbanization in this sub-region (it includes the major urban complexes of Kitchener-Waterloo and Galt-Preston-Hespeler). The best facilities for training skilled labour are located in these centres and in addition, skilled labour tends to migrate there from elsewhere in the Region to participate in the relatively high wage rates in these centres. The solution to the shortage of skilled labour has two dimensions: (a) how

to provide training facilities in areas where the problem is severe, and (b) how to retain in such zones whatever skilled people are already there.

On the other hand, the availability of unskilled labour is quite favourable for sub-regions II, VII and IX. To a large extent, these sub-regions are more rural and less industrialized than zones in the southern part of the Region and as such, attract industry types which are oriented to natural resources and/or the use of low skill level. Urbanized areas in the sub-regions V and VII find that unskilled labour is in short supply for those concerns requiring such. Field work has revealed that the pattern of unskilled labour supply is highest in those rural areas where industries are utilizing seasonal, farm labour.

For the Region as a whole the shortage of unskilled labour and its lack of an industrial tradition has had a significant negative effect on manufacturing location.

Where low wages mean an unskilled labour force, the chances are very real that productivity per worker is also low. A modern industry views wages as directly related to the productivity of a worker and his contribution to the industry's operations.

Communities which have low average wage levels probably have lost their better quality work force through migration to higher wage areas. The availability of a pool of qualified, skilled labour

is apt to be more important to the growth of a region than the cost of labour alone.

Most urban centres in the Region have sought to attract industry through the provision of infrastructure. In another section, the adequacy of these services will be evaluated in detail and suggestions made as to their potential for attracting industry. Since 1961, many new manufacturing locations in the study area responded to the availability of plants for purchase (especially true for United States subsidiaries). The success of the Centralia Industrial Park, in the former military base in Stephen Township is an example of this.

For the Region as a whole, the availability of land for plant expansion is ranked low on the favourable scale. In major urban centres, there is limited space for the expansion of existing plants; however, municipally owned and serviced industrial parks with available sites for new plant locations are well distributed throughout the Region.

In terms of the provision of public utilities, sewage disposal appeared to pose a problem in the larger urban centres during the time of the survey (a reflection of the rapid urban-industrial growth of these sub-regions).

Subsequently, the Stratford sewage treatment plant is being taken over by the Province and facilities expanded. The Waterloo sewage treatment plant now has adequate capacity since having solved

its organic overload problem. Goderich has adequate plant capacity from an organic viewpoint; however, sewer infiltration is causing a hydraulic overload problem.

Only 21 per cent of the firms interviewed saw the present tax structure as unfavourable. In fact, 48.8 per cent found that it was generally favourable. All sub-regions in which there were responses to the local tax question supported the view that this issue was favourable. Most municipalities compete with each other to attract new manufacturing and offer fairly generous provisions in terms of infrastructure.

Even though for the Region as a whole, provincial and federal incentives were ranked unfavourable, there was an extremely variable response pattern by sub-regions. Favourable responses came from companies in areas of Ontario Development Corporation designation and from those in urban centres which have received or expect Equalization for Industrial Opportunity loans. Unfavourable responses were marked in sub-regions II and VIII.

With regard to the availability of business services and cultural recreational facilities, they were generally considered favourable for most sub-regions. The availability of business services (convention facilities for instance), as well as cultural and recreational facilities, seems to conform to the functional type and size of centre.

Finally, housing as a whole was considered to be generally inadequate in the Region. Rental accommodation is specially emphasized and owner accommodation (less than \$15,000) is poorly supplied in sub-regions VIII and IX. This emphasizes the problem of providing inexpensive single-family dwellings in the Region.

Locational Factors -- Structural Aspects Tables 4.15 and 4.16 rank the locational factors influencing manufacturing by major industrial grouping.

(i) Food and Beverage Industry One outstanding feature of this industrial grouping is the even dispersion of firms throughout urban areas. The number of firms increases with the size of the urban centre and in areas of high agricultural production. Proximity of natural resources for these industries and proximity to markets are quite favourable. Where secondary stage semi-processed goods are required as inputs into production, (e.g. carbonated water for soft drink production), again the pattern is favourable for the Region. In sum, this group of industries can be considered as resource-oriented serving local markets.

In the production process, water is used in great quantities -- a factor which must be considered in promoting such industries. Urban centres need to evaluate the potential supply of water in terms of future residential versus industrial usage.

TABLE 4.15

RANKED LOCATIONAL FACTORS FOR MANUFACTURING, FAVOURABLE ASPECTS, BY SIC GROUPS, MIDWESTERN ONTARIO REGION

	Food and Beverage Industry Groups (SICs 10 - 14)	Leather, Knitting, Textile & Clothing Industry Groups (SICs 17 - 24)	Wood, Furniture & Fixtures, Paper & Allied Products Industry Groups (SICs 25 - 28)	Primary & Fabricated Metals Industry Groups (SICs 29 - 31)	Transportation Equipment Allied Industries (SIC 32)	Electrical Products Industry Group (SIC 33)	Chemical & Rubber Industry Groups (SICs 16 - 37)	Miscellaneous Industry Groups (SICs 15, 34 - 36, 38 - 39)
Proximity to good highways	4	1	1	1	1	4	1	2
Proximity to good railway services	5	4	5	2	3	8	3	4
Proximity to air services								
Proximity to water transportation								
Total cost of transportation								
Proximity to natural resources	2		9					
Proximity to sources of manufactured inputs	6	5	7	9		3	9	2
Proximity to markets	1	2	2	5	6	1	8	6
Availability of skilled labour								
Availability of unskilled labour								
Availability of administrative staff								
Attitude and relationship with trade unions	not ranked	3		8	4	5	7	1
Structure and cost of wages	6	6	3	7	9	7		5
			8		2			
Development of utilities and services								
Water	3							
Sewage	9	9		4	5	6	4	
Electric power	7	8	6	3	8	6	7	5
Land suitable and available for plant expansion			4	6	5	2	9	3
Tax structure								
Local taxes and incentives				9				
Provincial taxes and incentives					6			
Federal taxes and incentives					7			
Availability of local business services								
Availability of cultural and recreational facilities	8	7				9		6
Housing								
Rental accommodation								
Owner accommodation (less than \$15,000)								
Owner accommodation (\$15,000 and more)								6

*Standard Industrial Classification.

Source: Field Survey, 1969 and 1970, Regional Development Branch.

TABLE 4.16

RANKED LOCATIONAL FACTORS FOR MANUFACTURING, UNFAVOURABLE ASPECTS, BY SIC GROUPS, MIDWESTERN ONTARIO REGION

	Food & Beverage Industry Groups (SICs 10 - 14)	Leather, Knit- ting, Textile & Clothing Industry Groups (SICs 17 - 24)	Wood, Furniture & Fixtures, Paper & Allied Products Indus- try Groups (SICs 25 - 28)	Primary & Fabri- cated Metals Industry Groups (SICs 29 - 31)	Transportation Equipment Allied Indus- tries (SIC 32)	Electrical Pro- ducts Industry Group (SIC 33)	Chemical & Rubber Industry Groups (SIC 16 - 37)	Miscellaneous Industry Groups (SICs 15, 34 - 36, 38 - 39)
Proximity to good highways								
Proximity to good rail service				4			3	4
Proximity to air services		6	6	2	2	4	1	4
Proximity to water transportation								
Total costs of transportation								
Proximity to natural resources								2
Proximity to sources of manufactured inputs								6
Proximity to markets								
Availability of skilled labour	1	1	1	1	1		4	1
Availability of unskilled labour	3		5	8				
Availability of administrative staff	Not ranked,	Question asked only in Waterloo - Wellington - Survey 1970						
Attitude of and relationship with trade union		3				5		3
Structure and cost of wages								2
Water								5
Sewage								
Electric power		4						
Land suitable and available for plant								
Local taxes and incentives	5		4			1		6
Provincial taxes and incentives	5		3	5		3		
Federal taxes and incentives						4		
Availability of local business services	2			6	5			6
Cultural and recreational services								
Rental accommodation	6	5		7	4	2	2	7
Owner accommodation (less than \$15,000)	4	2		3	4	3	5	6
Owner accommodation (\$15,000 or more)								

*Standard Industrial Classification

Source: Field Survey, 1969 and 1970, Regional Development Branch.

Unfavourable locational factors for the food and beverage industry are the unavailability of skilled and unskilled labour and the inadequacy of business services. Further, most of these plants are located in urban centres where the availability of land for expansion is unfavourable.

(ii) Leather, Textile, Knitting and Clothing Industries

Two major favourable locational determinants for the continuing economic operation of firms in this group of industries are proximity of good highway and rail services and the availability of unskilled labour. Proximity of markets is also favourable especially since most firms are concentrated around Galt, Stratford and Kitchener which is closely tied to other major urban complexes by good highways.

These industries also find the availability of plant and of land for expansion favourable. Stratford, St. Marys and Galt are traditional textile and knitting centres with mills located near water. Leather industries too are resource-oriented. Plants were established in the past when the pressure on industrial land was not as competitive as now. Also, most of these operations do not require as much land as other industrial groupings since production usually is concentrated under one roof.

Even though a fair proportion of the job specifications in industries of this grouping can be classified as unskilled, there is still some need for skilled labour. The fact that these industries

tend to pay relatively low wages further intensifies the problem of attracting workers to learn these skills.

Finally, this industrial grouping finds Government incentives and assistance attractive. Most Government policy today, in terms of granting assistance, including unforgivable loans (like E.I.O.), requires that new establishments and new expansions generate further employment, a condition which is easily met by this group of industries since they are basically labour intensive.

Firms interviewed in this group again pointed to the inadequacy of single family dwellings at reasonably low prices. They also considered rental accommodation to be moderately unfavourable.

(iii) Wood, Furniture and Fixtures, Paper and Allied Products Industry Groups The wood, furniture and fixtures industry group is concentrated in two broad areas -- one in the north of the Region linking Wingham, Listowel and Mount Forest in sub-regions III, VI and VII, and one in the south linking Clinton, Seaforth and Mitchell. The wood and furniture industries in these areas have a long and distinguished tradition with locations based on historical parameters.

When the industries were established, raw materials were available locally -- now they have to be hauled over long distances.

This has led to heavy transport costs. Water transport, a key means of transporting raw lumber, is generally inaccessible and thus becomes unfavourable. However, with increasing truck transportation, proximity to good highways is a key favourable transportation element.

The locations of this group of industries relative to their markets are quite favourable. As furniture is a bulky, relatively cheap product, only the quality grades can support the costs of long-distance transport. At the same time, the industry is not one that enjoys significant economies of scale and only moderate sized plants can be competitive. In combination, these factors create an industry that is primarily oriented to markets. The industry, however, is already located in an area where the market potential is not particularly high and hence a problem has arisen.

The paper and associated groups of industries follow two locational patterns (a) resource-orientation (in terms of pulp and paper and this is fairly non-existent in the Region), and (b) market orientation (that is, for the production of converted paper products like sandpaper, paper bags, etc.). The latter, of course, follows the trends of urban-industrial concentration and growth. Highway accessibility and accessibility to markets are key elements in the future locational patterns of these industries.

Printing and publishing are also consumer oriented. The industry distributes approximately 75 per cent of its outputs to final

markets. This leads to a strong market association as reflected in the fact that printing and publishing has one of the highest coefficients of association with population of any manufacturing industry (.931 - compared with a coefficient of 1.00 which shows perfect association). This industry group may be expected to grow with increasing urban size.

Problems of labour supply, especially skilled labour are felt by this industrial category. It is ranked very unfavourable, followed by the total costs of transportation and the inadequacy of existing federal and provincial tax structures and incentives.

(iv) Primary Metal, Metal Fabricating and Machinery Industries Groups The location of the metals groups may be influenced to some degree both by access to resources and by access to final markets, but is not dominated by either. No other group of industries is so characteristically intermediate or so closely tied together through intra-industry relationships on both the input and output side of the market. A cursory estimate of input-output flows from the Survey suggests that with little exception, a third or more of both the inputs and the outputs of the metal or metal products industry, comes from or goes to other industries in the group. The highest concentration of this group will, therefore, be found in the largest urban centres -- over 63 per cent of all firms in this industrial grouping in the Midwestern Region are in either Kitchener-Waterloo or the Galt-Preston-Hespeler complexes.

Access to highways and rail services is quite favourable for these industries, allowing easy flows of inputs and outputs. At the same time, costs of transportation are unfavourable, especially since most inputs come from Toronto, Hamilton and Sault Ste. Marie. Most of the output is directed to the largest urban complexes which are mostly outside of the study area but relatively accessible. For instance, only three per cent of the total output remains in the Midwestern Region, 27 per cent goes to the Central Ontario Region and at least 31 per cent to other major centres in Canada.

Total costs of transportation are unfavourable, accessibility to major markets are only moderately favourable and access to sources of major manufacturing inputs are close to being unfavourable.

The problem of a shortage of skilled labour is well defined creating unfavourable locational advantages in the Region. Additional unfavourable locational elements arise with the unavailability of business services and pressures on housing for employees.

(v) Transportation Equipment and Allied Industries A significant growth industry in the Region and in Canada, the transportation equipment and allied industry group is market oriented, selling over 40 per cent of its output to the Toronto area and only negligible amounts within the Midwestern Region itself. At the same time, over 56 per cent of its inputs (mostly steel) originates from the Niagara Region and 23 per cent from the Northeastern Ontario Region. These are transported into the

Midwestern Region by truck. The location of the industry in the Region is therefore related to its proximity to a good highway and railway network. Because of the fairly wide separation of input sources, total transportation costs are unfavourable.

A major advantage for this industry group stems from the relatively lower wage bill. This again might be inversely related to the inadequacy of skilled labour for this industry type. The lower wage costs arise from the easy availability of unskilled labour which is generally low paid.

Land costs and land for plant location is another significantly favourable feature attracting these industries to the Midwestern Region.

The industry group finds that the availability of housing, both rental types and single family units, is highly unfavourable.

(vi) Electrical Products Industry Group Because of the heterogenous components of industry types in this group, only the broadest kind of generalization can be offered about its locational characteristics.

Estimates have been made of the major input-output relationship involved in this industry group.¹ Over 44 per cent of its inputs

¹See especially, Perloff, H.S., E.S. Dunn Jr. et al, - Regions Resources and Economic Growth, University of Nebraska Press, 1960. pp. 396-397.

and approximately 36 per cent of its outputs comes from and goes to other manufacturing firms. Approximately 20 per cent of its output is sold in the Toronto area and over half in other major centres in Canada.

Significantly, the industry group finds the Midwestern Region has favourable locational advantages in its proximity to markets and proximity to major sources of manufactured inputs (40 per cent of its inputs originates in Southwestern Ontario and 17 per cent in the United States). Related to market and input orientation, but isolated for emphasis, is the favourable highway network.

The industry group is fairly labour intensive and a strong employment generator. In the future, it would be a key industry type for attracting government incentives. Housing for workers is also cited as a problem, especially rental accommodation and single family dwellings under \$15,000.

In the Midwestern Region, the industry utilizes to a large degree, a reasonable amount of unskilled labour which is evidently favourable in the Region. Associated with this level of labour quality is a favourable wage structure.

(vii) Chemical and Rubber Industries Groups The task of analysing the locational determinants of these two groups is compli-

cated by the fact that they are in a state of rapid change. The rubber group was included here because large proportions of its inputs originate in the chemical products sector.

A mixed locational orientation is characteristic of this grouping of industries. The various processes can be oriented either to intermediate markets or to resource inputs, depending upon the trade area of each industry. Proximity to markets is considered unfavourable in Midwestern Ontario in the sense that the clearly resource-oriented salt industry at Goderich serves the Toronto and area market. Other chemical industries in the study area obtain inputs from the petrochemical complexes at Sarnia and from Toronto but serve local markets (5 per cent), the Toronto area (35 per cent) and other Canadian centres (27 per cent).

The totality of both patterns allows the emergence of high transportation costs, even though highway and rail services are generally favourable, essentially because raw material inputs are assembled and transported in bulk without weight loss and because the production process adds both considerable value and bulk.

A shortage of labour again poses a problem, especially in the case of skilled labour. The skills and training needed in these industry groups are fairly complex. Research and other business services which are in great demand are apparently not adequate in the study area. Also, even though the supply of unskilled labour is

inadequate, the fact that there is unskilled labour allows a very favourable wage structure -- an important determinant in locational decisions.

Finally, housing adequacy is once again emphasized as unfavourable -- especially single family dwellings under \$15,000.

(viii) Miscellaneous Industry Groups The aggregate grouping covered by the miscellaneous category represents the tobacco industry, the non-metallic industries, and other miscellaneous industries.

The industries represented in this broad context find proximity to sources of manufactured inputs favourable, as well as the road and rail network. Natural resources, however, are not highly accessible, especially for the non-metallic group which is definitely resource oriented and primarily serves local markets. One study estimates that increasing urbanization in the Toronto to Stratford and Toronto to Windsor corridors, plus the depletion of resources in such heavily urbanized areas, may create further demands on this industry group, especially for construction materials.¹ New resource-oriented industry of this type may come into being in the future.

These industries are also labour intensive generally, utilizing mainly unskilled labour which is adequate in the Region. Where

¹ Canadian Urban Economics Ltd., Waterloo-South Wellington Area Economic Base Study, Prepared for the Economic Development and Planning Technical Advisory Committee of the Waterloo-South Wellington Area Study, July 1969, p. viii.

skilled labour is demanded, characteristically it is unavailable to these industries. This industrial group also finds that the development of utilities and services are moderately favourable except for water availability. The cost of wages and associated with this, the relationship to trade unions, are both unfavourable.

5. Construction

The Midwestern Region's construction industry experienced a notable expansion during the 1957-1966 period as reflected in the value of building permits issued which rose from \$27.5 million in 1957 to \$151.5 million in 1966. In 1961, more than six per cent of the Region's labour force was employed in this industry, a percentage comparable to the provincial average.

As can be observed on Table 4.17, construction activity, as measured by the value of building permits, has risen more rapidly in Waterloo and Wellington counties than in Huron and Perth. In fact, in 1966, over 90 per cent of the total value of building permits was issued in the former two counties. The real impetus in construction activity began in Waterloo County in 1962 and in Wellington County in 1965.

(a) Residential Construction

Table 4.17 shows the county differences for three years - 1957, 1961 and 1966. In 1957, over 57 per cent of the value of building permits was for residential construction; by 1966 this had decreased to some 34 per cent. This trend apparently has reversed, for in 1968, the value of building permits in residential construction was \$75.8 million or approximately 59 per cent of the total.

TABLE 4.17

TOTAL VALUE OF BUILDING PERMITS, BY COUNTY,
MIDWESTERN ONTARIO REGION

	1957 \$000's	%	1961 \$000's	%	1966 \$000's	%
Huron	478	1.7	2,382	4.5	4,966	3.3
Perth	4,333	15.7	6,109	11.5	7,737	5.1
Waterloo	17,808	64.8	38,220	71.8	91,151	60.2
Wellington	4,911	17.8	6,497	12.2	47,624	31.4
Total						
Midwestern Region	27,530	100.0	53,208	100.0	151,478	100.0

VALUE OF RESIDENTIAL BUILDING PERMITS, BY COUNTY,
MIDWESTERN ONTARIO REGION

	1957 \$000's	%	1961 \$000's	%	1966 \$000's	%
Huron	286	1.8	1,143	4.8	691	1.4
Perth	945	6.0	1,597	6.7	3,504	6.9
Waterloo	11,630	73.8	16,793	70.8	36,114	71.0
Wellington	2,899	18.4	4,197	17.7	10,522	20.7
Total						
Midwestern Region	15,760	100.0	23,730	100.0	50,831	100.0

Source: Canada, Dominion Bureau of Statistics, Building Permits, 1957, 1961 and 1966.

In each year, residential construction in Waterloo County accounted for over 70 per cent of the total. The real impetus to residential construction began in Waterloo County in 1962, while in Wellington County growth was not significant until 1963. Perth County made major gains in 1962, and again from 1964 onward.

(b) Industrial Construction

The value of industrial building permits has fluctuated considerably over the years in Midwestern Ontario (see Table 4.18), although the proportion has remained relatively constant, ranging between 10 and 15 per cent of total value of building permits in the Region.

Industrial construction is most significant in Waterloo County, accounting for approximately 85 per cent of all industrial construction in the Midwestern Region in 1966. It appears to have peaked in the 1963-1966 period and there are indications that industrial construction slowed down in 1968, particularly in the City of Kitchener.

Wellington County experienced peaks of industrial construction during the 1957-1958 and 1963-1965 periods, while industrial activity in Perth County was high during 1956-1958, 1961, and 1963-1965. Industrial construction in Huron County has remained at relatively low levels.

TABLE 4.18

	VALUE OF INDUSTRIAL BUILDING PERMITS BY COUNTY, MIDWESTERN ONTARIO REGION				VALUE OF INSTITUTIONAL AND GOVERNMENT BUILDING PERMITS BY COUNTY, MIDWESTERN ONTARIO REGION							
	1957		1961		1957		1961					
	\$000's	%	\$000's	%	\$000's	%	\$000's	%				
Huron	37	0.9	355	4.7	285	1.7	63	2.0	149	1.4	3,730	5.2
Perth	1,419	34.5	1,705	22.6	681	4.3	333	10.7	2,012	19.0	2,096	3.0
Waterloo	1,858	45.1	5,140	68.1	13,543	84.7	2,046	66.0	7,741	73.2	31,641	44.4
Wellington	804	19.5	349	4.6	1,482	9.3	666	21.3	672	6.4	33,726	47.4
Total Midwestern Ontario Region	4,118	100.0	7,549	100.0	15,991	100.0	3,102	100.0	10,574	100.0	71,193	100.0

Source: Canada, Dominion Bureau of Statistics, Building Permits, 1957, 1961 and 1966.

(c) Institutional and Government Construction

Table 4.18 shows the substantial increases that have occurred in institutional and government construction. While this sector of construction activity accounted for over 11 per cent of the total value of building permits issued in 1957, it had increased to 47 per cent in 1966. This type of activity, however, has fluctuated considerably over the years and in 1968 it accounted for only 23 per cent of the total value of building permits.

Waterloo and Wellington counties together accounted for over 90 per cent of the value of all institutional and government building permits in the Region in 1966. Most of this construction began in Waterloo County in 1964 and in Wellington County in 1965 and generally applies to university construction.

Huron County experienced major increases in institutional and government construction, particularly in the 1964-1966 period; and Perth County in the 1963-1965 period.

(d) Commercial Construction

The value of commercial building permits is generally the lowest of any of the categories discussed, amounting to approximately nine per cent of the total value of building permits in 1966. By 1968, this had decreased to about eight per cent. Table 4.19 shows the value of commercial building permits by county. Waterloo County accounted for over 70 per cent of the total in both 1961 and 1966.

TABLE 4.19

	VALUE OF COMMERCIAL BUILDING PERMITS BY COUNTY, MIDWESTERN ONTARIO REGION					
	1957		1961		1966	
	\$000's	%	\$000's	%	\$000's	%
Huron	92	2.2	735	6.6	260	1.9
Perth	1,632	38.6	795	7.1	1,456	10.8
Waterloo	1,960	46.4	8,356	74.8	9,853	73.2
Wellington	543	12.8	1,279	11.5	1,894	14.1
Total Midwestern Ontario Region	4,227	100.0	11,165	100.0	13,463	100.0

Source: Canada, Dominion Bureau of Statistics, Building Permits, 1957, 1961 and 1966.

(e) Construction In Urban Centres

Approximately 80 per cent of the total value of building permits are issued in five urban centres - Kitchener, Guelph, Waterloo, Galt and Stratford. These centres consequently account for the major construction activity in their respective counties. For example, Kitchener-Waterloo accounts for some 70 per cent of the total value of building permits in Waterloo County and Guelph for over 80 per cent in Wellington County (see Table 4.20).

In 1957, over 58 per cent of the construction activity in these centres was residential, followed by commercial construction, over 17 per cent of the total. Because of university and government construction, particularly in Waterloo and Guelph, the major emphasis in 1966 was on institutional and government building which accounted for approximately 50 per cent of the total value of building permits for that year. Residential activity in these five centres accounted for another 31 per cent. The dominant construction activity in Stratford in both 1957 and 1966 was in the commercial sector.

The year 1968 saw the completion of a number of institutional and government construction projects. This sector of construction activity therefore declined to about 25 per cent of the total value of building permits. Residential construction regained its 1957 position and accounted for 57 per cent of the

TABLE 4.20

VALUE OF BUILDING PERMITS BY MAJOR URBAN CENTRES

	1957		1966		1968	
	Total Value Of Building Permits (\$'000's)	Area Of Major Activity	Total Value Of Building Permits (\$'000's)	Area Of Major Activity	Total Value Of Building Permits (\$'000's)	Area Of Major Activity
Kitchener	9,229	Residential	33,848	Residential	36,738	Residential
Guelph	4,071	Residential	42,907	Institutional & Government	23,823	Residential Institutional & Government
Waterloo	2,713	Residential	32,566	Institutional & Government Residential	21,420	Residential Institutional & Government
Galt	2,832	Residential	8,546	Residential Industrial	12,440	Residential
Stratford	2,805	Commercial	4,599	Commercial	7,172	Residential
Sub-Total	21,650		122,466		101,593	
Total Midwestern Ontario Region	27,530		151,478		129,547	
% Of Total	78.6		80.8		78.4	

Source: Canada, Dominion Bureau of Statistics, Building Permits, 1957, 1966, 1968.

total value of building permits issued in these five centres.

This section again tends to emphasize the importance of the area of the "Golden Triangle" in relation to the Midwestern Ontario Region.

6. Transportation, Communications and Utilities

In 1961 there were 8,120 persons in the labour force of the transportation, communication and utilities sector. This represented 5.6 per cent of the total labour force in the Mid-western Region compared to 8.2 per cent of the provincial labour force engaged in this sector. In 1951, only 5.1 per cent of the labour force was in this sector. The low values of the location quotient discussed previously would indicate that at this time, many of these services were obtained from outside the Region.

(a) Transportation

The transportation section is the largest employer in this group, having 4,642 members in the labour force in 1961, or over 57 per cent of the total transportation, communications and utilities sector. Perth County had the greatest concentration of workers in the transportation section. The significance of the transportation section in Perth County is indicated by the high value of the location quotient for that County, 1.12 in 1961.¹ The various means of transportation, access to and from the Mid-western Region and the impact of the transportation network is discussed in Chapter V of this report.

¹Refer to Table 4.1

(b) Communications

The growing demand for a rapid and extensive communications service has had an effect upon the Midwestern Region. Instantaneous transmission of information is available through telephone, telegraph, teletype, radio and television, while various publications provide the Region with news and comments of both general and specialized interest.

There are six radio stations and two television stations in the Region. Their broadcasts can be received in virtually every household since, according to the 1961 Census, 86 per cent of all occupied dwellings were equipped with at least one television set, while the comparable figure for radios was estimated to be as high as 98 per cent.

Radio stations are located in all four counties - at Wingham, Stratford, Galt, Kitchener and Guelph. In addition, there is a radio station at the University of Waterloo which serves the university community. The reception area for the Wingham station includes all of Huron and Perth counties and extends into the Lake Erie and Georgian Bay regions. The Kitchener and Guelph stations exert their influence over the three eastern counties of the Midwestern Ontario Region.

The two television stations are located in Wingham and Kitchener. The former has a coverage which extends north to Owen

Sound, east to Kitchener and south to the Lake Erie Region. The influence of the Kitchener station goes into Hamilton and takes in most of Southern Ontario west of London.

There are four daily newspapers in the Region: the Kitchener-Waterloo Record, the Galt Reporter, the Guelph Mercury and the Stratford Beacon-Herald. In addition there are many weekly publications catering to the demand for more locally oriented news and comment. The Development of an Urban Corridor System, Toronto to Stratford Area, 1941-1966 by Lorne Russwurm¹ indicates the newspaper spheres of influence and their significance in the urban hierarchy. Table 4.21 is extracted from this report and shows the significance of various daily newspapers in the Southwestern Ontario Region. The Kitchener-Waterloo Record has the widest circulation in the Midwestern Region with 31 per cent being outside the Kitchener-Waterloo and Bridgeport area. Its influence is exerted over an area from Guelph to Stratford and consequently includes the majority of the population of the Region.

Particularly significant is the coverage of the Stratford Beacon-Herald and the London Free Press, both of which extend their circulation into the western part of the Region. Some 44 per cent of the former's circulation and 59 per cent of the latter's

¹L.H. Russwurm, The Development Of An Urban Corridor System, Toronto to Stratford Area, 1941-1966. A Report Submitted to the Regional Development Branch, Department of Treasury and Economics, September, 1969.

TABLE 4.21

DAILY NEWSPAPER FLOWS 1966

	Population 1966	Circulation ^a				Persons Per Paper Circulated Within City
		Total	Within Publishing City	Outside Publishing City	Per Cent Circulation Outside	
The Three Toronto Dailies	1,824,481 ^b	815,884	507,119	308,765	38	3.6
Hamilton Spectator	385,000 ^b	119,704	95,747	23,957	21	4.0
London Free Press	194,416 ^b	122,727	50,413	72,314	59	3.8
Kitchener-Waterloo Record	125,255 ^b	45,490	31,410	14,080	31	4.0
Brantford Expositor	59,854	24,084	16,569	7,515	31	3.6
Guelph Mercury	51,377	16,113	11,428	4,685	29	4.5
Oakville Journal Record	48,000 ^b	7,016	6,172	844	12	7.7
Galt Reporter	46,871 ^b	13,267	10,410	2,857	22	4.5
Brampton Times and Conservator	36,264	7,048	5,255	1,793	26	6.8
Woodstock Sentinel Review	24,027	10,081	6,213	3,868	39	3.9
Stratford Beacon-Herald	23,068	10,026	5,661	4,365	44	4.1

^aData source is the Audit Bureau of Circulation; circulations are based on the first 6 months of 1966 but refer to daily totals.

^bThe Hamilton population includes Dundas and Burlington with 61,000 estimated as the population for Burlington. The London population is the metropolitan area population; the Kitchener-Waterloo population includes Kitchener, Waterloo and Bridgeport; the Oakville population is an estimate for the built-up area; the Galt population includes Preston.

Source: L.H. Russwurm, op. cit. p.226, Table 40.

circulation is outside the urban centre of origin. It is noteworthy that the influence of Toronto and London in the Kitchener-Waterloo area has been weakening over the years.

(c) Utilities

The utilities section of the transportation, communications and utilities sector is the smallest employer, having some 1,195 members of the Midwestern Region's labour force in 1961. Water and sewage are discussed in other parts of this report, so that attention will be devoted toward the energy resources of the Region.

The Midwestern Ontario Region is almost completely dependent on outside sources for its energy. The main form of energy, hydro-electric power, has been available for many years. More recently, natural gas has been imported by pipeline, while supplies of petroleum oils and coal are brought in by rail and road.

(i) Natural Gas Pipeline

The Union Gas Company of Canada Limited is the major distributor of natural gas in the Region. There are four major natural gas pipelines. The first is an east-west line from the Lambton County gas storage pools, which runs south of Galt and generally connects to other pipelines servicing the Region. The

others include a line to Stratford, Seaforth and Goderich; a line into the Kitchener-Waterloo area and north to Mount Forest, with interconnections for communities along the way, such as Harriston, Listowel and Fergus; and a third line to Guelph. In addition, short pipelines are in operation to Galt-Preston and St. Marys. In 1966 there were 791 miles of distribution pipeline in the Region compared to only 244 miles in 1957.

(ii) Electric Power

The Hydro-Electric Power Commission of Ontario serves the Midwestern Region with electric power generated primarily at plants in Niagara Falls and Douglas Point.

The Region's demand for electric power has expanded steadily, in line with the expansion of manufacturing industries and the use of electrical machinery and appliances. From 1956 to 1966, electric energy sales and revenue increased from \$13.4 million to \$25.7 million in the Midwestern Region. This represented a 92 per cent increase, comparable to that in the Province generally. While over 90 per cent of the customers in 1966 were residential, they consumed only 37 per cent of total kilowatt hours. Industrial customers, although representing only 1.4 per cent of total 1966 customers, utilized approximately 44 per cent of total kilowatt hours.

Transmission lines of 230 Kv, 115 Kv and lower voltage

traverse the area. A major 230-155 Kv transformation is located at Detweiler Transformer Station near Kitchener. Several small combustion turbine units were installed at this station as part of a program to provide a source of stand-by power for emergencies, and to contribute toward a more adequate margin of reserve capacities at times of peak loads during the current period of rapid load growth.

A new nuclear station is being built on Lake Huron, near Port Elgin, on a site adjacent to the 200,000 kilowatt Douglas Point Nuclear Power Station. The new station, known as Bruce Generating Station, will have four 750,000 kilowatt units. One of these is scheduled to be in service by 1975, and all four are expected to be in service by 1978.

7. Wholesale and Retail Trade

(a) Wholesale Trade

The wholesaling function does not appear to be particularly strong in the Midwestern Ontario Region, with total sales representing only 3.7 per cent of total wholesale sales in the Province. This is probably due to the wholesaling influence of nearby Toronto and London.

Although total sales showed a 60 per cent increase from 1951 to 1961 to a total value in excess of \$229 million, spatial variations were pronounced within the Region. For example, wholesale sales decreased in Huron County, perhaps indicative of the influence of London. The centres of Kitchener, Guelph and Stratford are the dominant wholesale centres for their respective areas, with the former having over twice the number of wholesale companies than the next wholesale centre, Guelph, and three times the sales volume.

In relation to labour force, all counties showed an increase from 1951 to 1961, with Waterloo County showing the greatest increase. In 1961, the City of Kitchener alone accounted for approximately 38 per cent of the 4,271 persons in the labour force in wholesale trade in the Region.

(b) Retail Trade

A rising population together with growing disposable incomes and a diversified economic base have contributed to an increase in retail trade in the Midwestern Region. In 1966, sales amounted to nearly \$499 million compared to \$334 million in 1961. Regional sales in 1966 represented 5.8 per cent of total provincial sales.

All counties have had substantial increases in retail sales over the 1951-1966 period, the greatest percentage increases occurring in Waterloo County, where the majority of the population now resides.

While differences in county expenditure patterns were discernible in 1951, these had mostly disappeared by 1961 (See Table 4.22). For example, retail sales in food stores were a much smaller percentage of the total in Huron and Perth Counties in 1951, perhaps the result of the more rural nature of these counties where farmers were more self-contained. With urbanization, farm consolidation and population movement from these counties, expenditures for food more closely approximated the urban counties of Waterloo and Wellington in 1961. Of total retail expenditures, approximately 60 per cent are made in food and automotive stores.

Table 4.23 shows the number of stores and employment in the retail sector for 1951 and 1961, with estimates for 1968. While the total number of stores has increased, this has fairly well been restricted to the area of the "Golden Triangle". The sales volume per store has

TABLE 4.22

RETAIL SALES AND MAJOR RETAIL EXPENDITURES,
BY COUNTY, MIDWESTERN ONTARIO REGION

		HURON		PERTH		WATERLOO		WELLINGTON	
		1951	1961	1951	1961	1951	1961	1951	1961
Total Retail Sales (\$'000's)		29,234	40,241	41,166	52,454	100,135	171,125	48,322	70,372
Food Stores	%	18.2	26.7	23.2	24.0	27.8	27.3	28.1	27.5
Automotive	%	31.7	33.6	33.9	35.8	24.9	33.4	26.7	30.2
General Merchandise	%	12.8	11.8	9.9	10.0	7.5	8.9	7.1	9.9
Apparel and Accessories	%	4.7	6.7	6.5	7.2	9.8	8.2	9.1	8.1
Hardware and Home Furnishings	%	-	10.5	-	7.1	-	7.5	-	7.4
Other	%	32.6	10.7	26.5	15.9	30.0	14.7	29.0	16.9

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Retail Trade, (Ottawa: Queen's Printer, 1951 and 1961), Table 8, Table 4 and Table 6.

TABLE 4.23

NUMBER OF RETAIL STORES AND EMPLOYMENT,
BY COUNTY, MIDWESTERN ONTARIO REGION

	Number of Stores			Employment		
	<u>1951</u>	<u>1961</u>	<u>Estimated 1968</u>	<u>1951</u>	<u>1961</u>	<u>Estimated 1968</u>
Huron	609	599	569	1,055	1,270	1,360
Perth	627	614	599	1,713	1,695	1,665
Waterloo	1,264	1,446	1,887	4,605	6,111	8,718
Wellington	788	831	913	2,093	2,498	2,958
Total Midwestern Ontario Region	3,288	3,490	3,968	9,466	11,574	14,701

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Service Trades,
(Ottawa: Queen's Printer, 1951 and 1961).

continued to rise in all counties and major urban centres, however, indicative of the increase in store size, population, disposable incomes, etc.

Employment in the retail trades is estimated at some 14,700 persons in 1968, a significant increase compared to the 1951-1961 decade. Labour force statistics for 1961 showed that the Midwestern Region had a much smaller percentage of people in the services and trades than did the province generally. In the Midwestern Region, 10.5 per cent of the labour force was engaged in retail trade compared to 11.2 per cent in the Province. It would appear that population and the manufacturing sector received impetus during the 1951-1961 decade while the services and trades sectors lagged behind. The latter sectors have experienced relatively larger increases in employment during the 1960's than in the previous ten year period.

It would be of interest to determine the shopping attractiveness of various centres in relation to their trade area. Per capita retail sales could be used as a measure assuming that the trade area populations were basically the same. However, because of the major population concentrations in the "Golden Triangle" relative to other areas, the per capita retail sales per urban centre can be quite misleading and would show retail sales per capita to be lowest in those centres of greatest population. Alternatively, a trade area population can be estimated for each urban centre, thereby allowing per capita retail sales to reflect the shopping intensiveness of urban centres. Table 4.24 shows the results of such a procedure.

TABLE 4.24

PER CAPITA RETAIL SALES BY URBAN CENTRE,
MIDWESTERN ONTARIO REGION, 1966

<u>Centre</u>	<u>Trade Area Population</u>	<u>Retail Sales (\$000's)</u>	<u>Sales Per Trade Area Population \$</u>
Listowel	13,882	13,091.8	943
Kitchener-Waterloo	220,568	168,464.1	764
Exeter	9,274	7,027.7	763
Galt-Preston-Hespeler	85,048	60,177.6	708
Guelph	98,772	69,667.0	704
Stratford	54,675	38,381.0	702
Goderich	20,628	14,315.5	694
St. Marys	12,149	8,301.6	683
Mount Forest	8,601	5,828.6	678
Wingham	8,707	5,709.5	656
Clinton	9,481	5,599.3	591
Seaforth	9,315	4,673.7	502
New Hamburg	16,387	6,064.1	370
Mitchell	11,325	4,178.9	369
Fergus	20,966	6,709.2	320
Elmira	23,922	5,907.7	247

Sources: Field Survey, Regional Development Branch, 1969 and 1970.
Canada, Dominion Bureau of Statistics, Advance Bulletin
of Census of Retail Trade, 1966.
Canada, Dominion Bureau of Statistics, Census of Population,
1966.

The attraction of certain centres providing retail functions for their own centre as well as surrounding areas is quite pronounced, particularly with Listowel in northern Perth County and Exeter in southern Huron. The influence of the major urban centres of the Midwestern Region can also be discerned. The first seven ranked cities or complex of cities, that is, from Listowel to Goderich accounted for over 74 per cent of all retail sales in the Midwestern Region in 1966. This compared to 70 per cent in 1951, showing the increasing importance of these centres as retail outlets.

8. Finance, Insurance, Real Estate

Of the 1961 labour force, 4,957 persons were engaged in finance, insurance and real estate in the Midwestern Region. This represented 3.4 per cent of the labour force compared to a provincial average of 4.1 per cent. Only in Waterloo County was this sector of any significance - with 3,308 persons, or approximately 67 per cent of the regional labour force. In 1968, there were some 700 establishments in this sector, approximately 50 per cent of which were located in Waterloo County.

(a) Finance

There were some 230 credit agencies and banks, or branches thereof, in the Midwestern Ontario Region in 1968. About 25 per cent of these were located in the City of Kitchener. The other major finance centres included Guelph, Waterloo, Galt, Stratford and Goderich.

(b) Insurance

There were approximately 300 insurance agencies in the Midwestern Region in 1968, of which some 25 per cent were located in Kitchener. Other major insurance centres included Guelph, Stratford, Galt and Waterloo.

(c) Real Estate

Of the approximately 170 real estate agencies in the Midwestern Region, 30 per cent are located in Kitchener. There appears

to be a greater concentration of these agencies in the major urban centres than was true for the financial and insurance agencies. The same urban centres mentioned above are also major real estate centres.

(d) Summary

Table 4.25 shows the major urban centres by county with the greatest number of finance, insurance, and real estate agencies. It should be noted that this does not indicate the size of the agency nor the number of people employed.

In all counties, the major urban centre of population dominates the number of finance, insurance and real estate agencies in its respective county. The total number of agencies is directly related to the size of each centre's trade area as well as its location and distance from other major urban centres.

TABLE 4.25

MAJOR FINANCE, INSURANCE, REAL ESTATE CENTRES, BY COUNTY, MIDWESTERN ONTARIO REGION, 1968

	<u>HURON</u>	<u>PERTH</u>	<u>WATERLOO</u>	<u>WELLINGTON</u>
Finance	Goderich Exeter	Stratford Listowel St. Marys	Kitchener Waterloo Galt	Guelph Fergus
Insurance	Goderich Seaforth Exeter	Stratford Listowel St. Marys	Kitchener Galt Waterloo	Guelph Mount Forest Fergus
Real Estate	Goderich Wingham Seaforth	Stratford Listowel St. Marys	Kitchener Galt Waterloo	Guelph Fergus Mount Forest
Total	Goderich (25) Exeter (10) Seaforth (10) Wingham (10)	Stratford (60) Listowel (20) St. Marys (15)	Kitchener (180) Waterloo (60) Galt (60)	Guelph (110) Fergus (15) Mount Forest (15)

Source: Telephone Directories, 1968.

9. Community, Business and Personal Services

(a) The Midwestern Ontario Region

One of the more important sectors in today's economy and one in which data are perhaps the most sparse is the service sector. In this section some of the general parameters are reviewed. A more detailed evaluation will be found in Chapter VII.

In 1961, the labour force of the Midwestern Region contained 23,774 persons in community, business and personal services. This represented over 16 per cent of the Region's labour force. In contrast, the Province generally had approximately 20 per cent of its labour force engaged in these service trades. Almost 50 per cent or 11,852 persons, were engaged in community services as distinct from personal or business services.

Distinct patterns emerge from the percentage distribution of selected service receipts (See Table 4.26). Percentage expenditures on amusement and recreation are highest in Huron County, possibly resulting from the intensive cottage development along the Lake Huron shoreline. Business services are predominant in Waterloo County, indicative of the degree of commercial and business activity of the Kitchener-Waterloo area. Repair services appear to be highest in the more rural counties of the Region. Lastly, the influence of the Shakespearean Festival in Stratford appears to dominate the expenditure patterns with regard to accommodation and eating places.

TABLE 4.26

RECEIPTS IN SELECTED SERVICES, BY COUNTY, MIDWESTERN ONTARIO REGION, 1966

		<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	Province of <u>Ontario</u>
Total Receipts (\$000's)		5,698.8	8,406.7	39,320.9	12,554.5	1,839,281.4
Amusement and Recreation	%	13.4	7.7	10.2	8.9	11.4
Business Services	%	2.9	4.2	9.9	3.6	13.8
Personal Services	%	15.9	15.8	19.2	16.8	13.6
Repair Services	%	4.3	2.6	2.1	8.3	1.4
Hotel, Tourist Camp and Restaurant	%	54.6	61.3	48.8	55.6	45.7
Miscellaneous Services	%	8.9	8.4	9.8	6.8	14.1
Total	%	100.0	100.0	100.0	100.0	100.0

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Service Trades, 1966, (Ottawa: Queen's Printer), Table 5.

Of total receipts in the selected services, accommodation and restaurants account for well over 50 per cent of expenditures except for Waterloo County where such receipts are approximately 49 per cent of the total.

In the earlier discussion on retail trade, it was mentioned that the service trades had lagged behind in the Region's development during the 1950's. There is evidence that improvements have been considerable during the 1960's. For example, between 1961 and 1966, total receipts increased by 61 per cent in the Region compared to over 56 per cent in the Province generally. This was a better performance than shown in the 1951-1961 decade where the Region's increase in service receipts was 82 per cent compared to a provincial norm of 105 per cent.

Few data are available on the service sector by urban centre. Those which are available relate to the selected services above (See Table 4.27). The significant factor shown here is the ranking of Stratford in relation to service receipts, which would appear to indicate the importance of the Shakespearean Festival to the Stratford area.

(b) The "Golden Triangle"

An examination of the major trade sectors in the "Golden Triangle" indicates a structuring of functions (See Table 4.28). Certain

TABLE 4.27

*
PER CAPITA RECEIPTS FROM SELECTED SERVICES BY URBAN CENTRE, MIDWESTERN ONTARIO REGION, 1966

Centre	Trade Area Population	Total Service Receipts (\$'000's)	Total Receipts Per Trade Area Population \$	Service Receipts Per Trade Area Population (Ranked)	Retail Sales Per Trade Area Population (Ranked)
Kitchener-Waterloo	220,568	25,986.0	118	1	1
Stratford	54,675	5,126.0	94	2	4
Guelph	98,772	9,018.1	91	3	3
Galt-Preston	85,048	7,325.6	86	4	2
Goderich	20,628	1,174.5	57	5	5

223

*Includes the following groups - amusement and recreation, business services, personal services, repair services, hotel, tourist camp and restaurant and miscellaneous services.

Source: Canada, Dominion Bureau of Statistics, 1966 Census of Canada, Service Trades, (Ottawa: Queen's Printer).

patterns emerge from an analysis of the sales volumes, percentage changes over the given years, and the percentage distribution of each trade function by centre.

Kitchener is the dominant wholesaling centre, although significant increases are apparent in Galt and Preston. This could be the result of closer proximity to Highway 401.

In the retail trades, Waterloo has the greatest percentage of its trade activity in the retail sector and has demonstrated significant increases between 1961 and 1966. This probably reflects the university activity in that centre. Kitchener, however, remained the largest retail centre in the "Golden Triangle," even though in 1966 it accounted for considerably less than half of the total retail sales of this area.

The service trades reflect only selected services and as a result do not necessarily show the total influence of each centre as a service functional unit. Other data to be discussed in Chapter VII on the functional hierarchy of centres show Kitchener and Guelph to be equally strong service centres.

In summary, Kitchener appears to be the dominant wholesale trade centre for the region of the "Golden Triangle". In addition, it, as well as Guelph, are the main centres of service activity.

TABLE 4.28

TRADE SECTORS, TOTAL RECEIPTS AND PERCENTAGE CHANGE, "GOLDEN TRIANGLE"

		Retail Trade Sales, 1966	Per Cent Change 1961-1966	Service Trade Receipts, 1966	Per Cent Change 1961-1966	Wholesale Trade Sales, 1961	Per Cent Change 1951-1961
Galt	\$000's %	42,595.4 (68.5)	57.3	4,782.2 (7.7)	60.5	14,819.9 (23.8)	209.8 (100.0)
Guelph	\$000's %	69,667.0 (71.5)	48.1	9,018.1 (9.3)	56.1	18,758.3 (19.2)	67.8 (100.0)
Kitchener	\$000's %	129,261.0 (57.7)	40.7	19,620.8 (8.8)	60.9	75,158.4 (33.5)	62.4 (100.0)
Preston	\$000's %	13,553.1 (72.7)	69.4	2,543.4 (13.6)	48.2	2,559.1 (13.7)	893.8 (100.0)
Waterloo	\$000's %	39,203.1 (79.0)	166.2	6,365.2 (12.8)	187.0	4,054.2 (8.2)	-17.0 (100.0)

Sources: Canada, Dominion Bureau of Statistics, Census of Retail Trade, 1961 and Advanced Bulletin of Census of Retail Trade, 1966, (Ottawa: Queen's Printer, 1961 and 1966).
Canada, Dominion Bureau of Statistics, Census of Canada, Wholesale Trade, 1951 and 1961 (Ottawa: Queen's Printer), Tables 5, 7 and 8.

10. Public Administration and Defense

In 1961, there were 7,110 people of the Midwestern Ontario Region's labour force engaged in the public administration and defense sector. Over 70 per cent were in either the Huron (42 per cent) or Waterloo (30 per cent) labour force. This sector accounted for 4.9 per cent of the regional labour force compared to 7.6 per cent in the Province generally.

The large percentage in Huron County in 1961 was attributable to the defense bases at Clinton and Centralia. The latter has been phased out and the base at Clinton is due to phase out in September of 1971. As a result this sector has experienced a considerable decline. The base at Centralia has been converted into an industrial park, with total employment approaching 500 people in 1969.

It is estimated that some 250 civilians from the surrounding area are employed at the base at Clinton. In addition, approximately 700 military personnel and their dependents are located there. Consequently, the impact on the trade sectors of the nearby small communities could be significant when the base phases out in September of 1971. On the other hand, every effort will be made to place the civilian employees in other jobs. The Canada Manpower Centre will be assisting in this effort. The base facilities are presently being evaluated to determine their future use.

CHAPTER V

TRANSPORTATION

Summary

- (a) Much of the general increase in the mobility of people, resources and goods in the Midwestern Region can be attributed to improved highway systems.
- (b) The network of roads and highways in the Midwestern Ontario Region is one of the most dense in the Province. Urban and rural areas are serviced with a road transportation system which totals nearly 7,000 miles and generally ranges in condition from good to excellent.
- (c) Highways in the Region which have recorded above average growth in utilization are mainly those accommodating the ever expanding number of commuters to the urban centres and those leading to recreational areas such as the shores of Lake Huron.
- (d) The Region is well serviced with trucking companies, providing interprovincial trucking facilities as well as direct connections with the United States.
- (e) Rail and bus service is presently provided to all parts of the Region, although there is some concern that such

services may be inadequate to the northern part of Midwestern Ontario should rail services be discontinued.

- (f) The Region has many small airfields accommodating business firms and recreationalists. Although there are no major airports within Midwestern Ontario, Toronto and London are sufficiently near to offer rapid connections with all major centres on the Continent and overseas.
- (g) The harbour at Goderich is the only commercial port in the Region. The majority of cargo handled is either salt or grains, with the former having become a significantly larger proportion of total tonnage handled since 1960.
- (h) The highway transportation system is being totally evaluated in the Midwestern Region by the Department of Highways in conjunction with urban and area transportation studies. In particular these include the Waterloo-South Wellington Area Study, the Lake Huron-Georgian Bay Area Highway Planning Study and the London Area Highway Planning Study.

Major Facilities and Networks

1. Road Transport

Much of the general increase in the mobility of people, resources and goods can be attributed to improved highway systems and greater usage of highways by both commercial and private vehicles. The number of licensed vehicles in the Province increased by 55 per cent in the decade prior to 1965. In the Midwestern Ontario Region, 160,846 vehicles were registered in 1965, an increase of 45 per cent over the 1955 figure (registrations in Waterloo County rose by 88 per cent). By 1967, there were over 177,000 motor vehicle registrations in the Region or one vehicle per 2.39 persons compared to 2.52 in the Province.

A major spatial reorganization of economic activity can be attributed almost directly to this increased mobility. The decline of the small urban service centre and the corresponding expansion of certain strategically located larger centres is a function of the increased distance that individuals can travel. In addition, the increased capacity and efficiency of truck transport affords manufacturing and agricultural activities an ever

increasing freedom of choice in their place of location.

As a good road system is vital to the economy, policies concerning road construction and routing have a far reaching influence on the pattern of economic development. For example, cities such as Kitchener-Waterloo and Galt-Preston-Hespeler are serviced by four-lane highways and have freeway access to London and Toronto; many manufacturing activities are being attracted to the Highway 401 corridor rather than to the western and northern parts of the Region.

Figure 21 shows the major highways and railways in the Midwestern Ontario Region. The network of roads and highways in the Region is one of the most dense in the Province. Urban and rural areas are serviced with a road transportation system which totals nearly 7,000 miles and generally ranges in condition from good to excellent. Organized township roads account for 62 per cent of the total mileage, county roads for 17 per cent and the remaining 8 per cent, or 572 miles are King's Highways.

Figure 22 gives an elementary indication of the accessibility pattern which these routes create. Thus the impression of "local accessibility", the ease with which one may travel within an area, and the fact that certain areas are more accessible

TRANSPORTATION FACILITIES AND NETWORKS



- LEGEND
- Port
 - △ Major Airport
 - △ Minor Airport
 - Major Highway
 - Highway
 - Centre
 - +++ Railway
 - Regional Boundary

ACCESSIBILITY BASED UPON ROUTE INTENSITY



ACCESSIBILITY
LEGEND

GOOD

 POOR

— Regional Boundary

than others, may be clearly seen.¹ It should be noted, however, that a measure of accessibility must be related to the needs of any particular area before it can be meaningful for planning purposes.

Because the highways link all the major centres with each other and with the large, nearby metropolitan areas of Toronto, Hamilton and London, they carry the highest traffic volumes and consequently demand the greatest attention and expenditure in the form of maintenance, modernization, traffic safety devices, etc.

For the fiscal year 1966-1967 the Province allocated \$10.3 million to expenditures for construction and maintenance of roads in the Region. This was 4.7 per cent of all the money spent by the Province on roads that year. Provincial expenditure on road construction and maintenance in the Region has steadily increased since 1963, when the proportion was 3.4 per cent

¹The accessibility pattern, in effect, represents the local density of surface transportation links or route intensity. By placing a hexagonal grid pattern, scaled to 10 mile cells over a map of surface routes, and counting the frequency with which routes crossed cell boundaries, route intensity in each cell was established. A six category classification was derived from these values, and accessibility isolines (lines representing equal route intensity values) drawn. Source: Dean, W. (ed) Economic Atlas of Ontario, published for the Government of Ontario by the University of Toronto Press, Toronto, 1969. Plate 85.

A further measure of accessibility on an urban centre basis, related to four transportation modes (road, rail, port and airport), is presented in Chapter VII.

compared to 3.5 per cent in 1964 and 3.9 per cent in 1965. Major projects undertaken in recent years include the Conestoga Freeway in Kitchener and Waterloo, the four-lane section of Highway 24 linking Galt with Highway 401, the rebuilding program of Highway 4 between Clinton and London, the Hanlon Expressway in Guelph, the St. Marys by-pass of Highway 7, the rebuilding of Highway 23 between Mitchell and Palmerston and of Highway 89 between Palmerston and Mount Forest, and the upgrading of Highway 8 between Stratford and Goderich.

Highway 401 has carried an increased average number of vehicles per day in every year since its opening. The highway's capacity is such, however, that no major problems are anticipated for at least a decade, assuming the continuation of present trends.

Other highways in the Region which have recorded above average growth in utilization are mainly those accommodating the ever expanding number of commuters to the urban centres and those leading to recreational areas such as the shores of Lake Huron: (i) Highway 85 connecting Kitchener-Waterloo with suburban areas such as St. Jacobs and Elmira; (ii) Highway 83 which leads to the camping, cottage and beach area around Grand Bend; (iii) Highway 21 connecting Detroit and Sarnia with the Huron lakeshore; and (iv) Highway 86, another major traffic route to Lake Huron's recreational facilities.

In order to facilitate traffic movement, the Department of Highways, in addition to the aforementioned construction and maintenance projects, has introduced a two-way radio system to the Region, thereby greatly increasing efficiency in the communications necessary for expediting work completions and minimizing delays in traffic flow by rapid reporting of accidents.

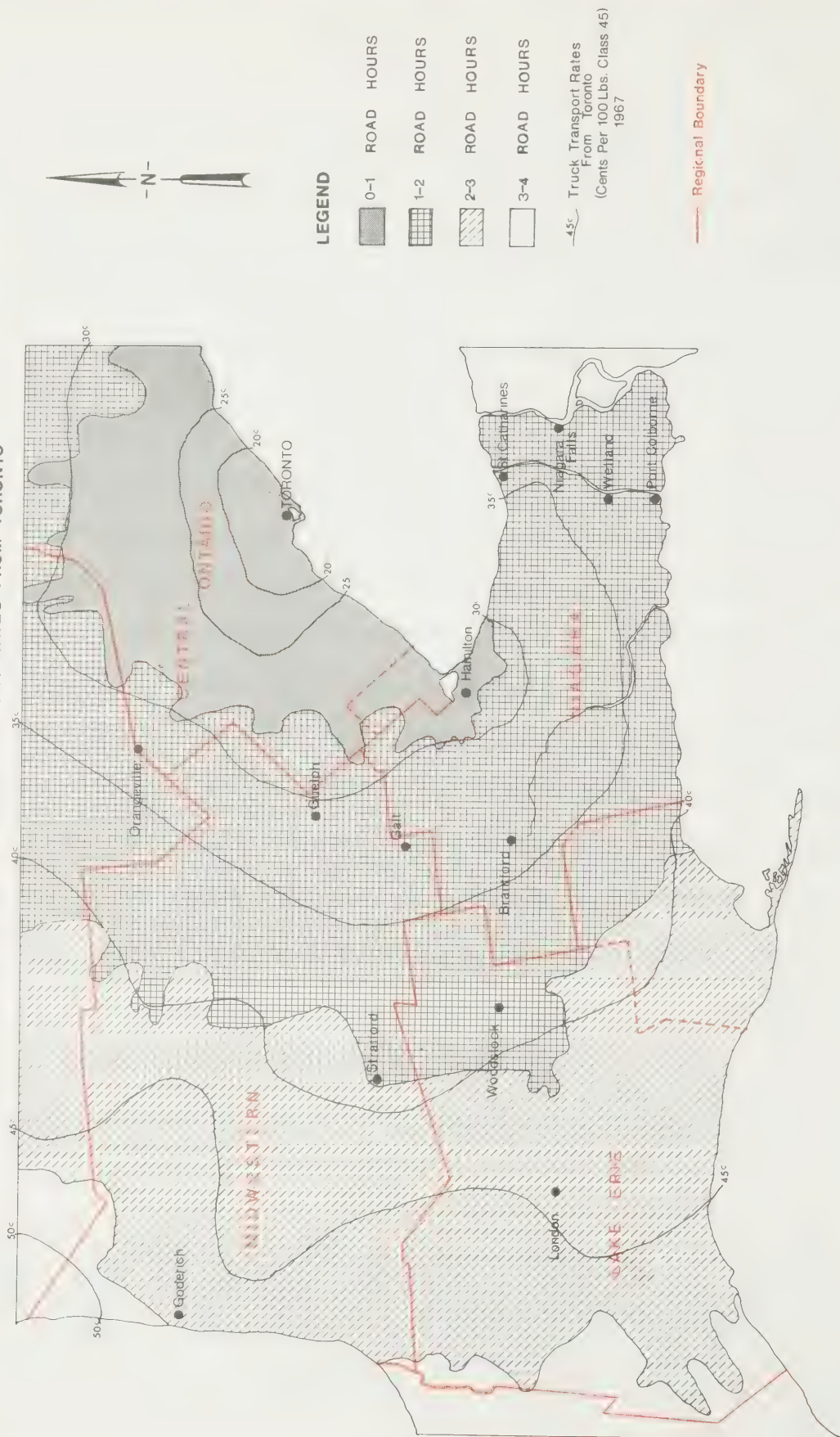
Trucking The Region's extensive and excellent system of roads and highways has contributed in no small manner to the development of trucking operations as a most important method of transporting goods and materials. Figure 23 summarizes the relationship between truck transportation rates and road hours from Toronto.¹ All parts of the Region are within two or three hours driving time of Toronto. The most heavily industrialized and populated part of the Region, the "Golden Triangle", is approximately one hour's distance from Toronto. Significantly, the map shows that truck transportation rates are nearly concentric and that they increase with increasing distance from Toronto.

The Survey of Manufacturing (discussed in Chapter IV) revealed that good accessibility to Toronto was an important consideration for

¹For a detailed discussion of truck transportation rates see Field, W.C., and D.P. Kerr, Geographical Aspects of Industrial Growth in the Metropolitan Toronto Region, Research Paper No. I, October, 1968, pp. 93-99.

The road hours variable was considered one of principal factors underlying the basic structure of transportation networks in Ontario. See Economic Atlas of Ontario, op.cit., 1969, Plate 94, for a definition and further discussion.

ROAD HOURS AND TRUCK TRANSPORT RATES FROM TORONTO



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
 Source : Economic Atlas of Ontario, Plate 94; N.C. Field and D.P. Kerr, Geographical Aspects of Industrial Growth
 Metropolitan Toronto Region, Regional Development Branch, 1968

many manufacturers in the Region who depend upon the Toronto area as a major source of manufactured inputs and as a market for their final outputs.

The services of 45 companies assure the Region's business establishments rapid access to all centres within Ontario, while 11 companies provide interprovincial trucking facilities and five firms connect the Region directly with the United States. In addition, numerous enterprises specialize in short-haul operations among all counties in the Region.

In 1968, Kitchener was served by 40 companies, Guelph by 28, Galt, Preston and Waterloo by 24, and Stratford by 17 trucking firms. The majority of these enterprises hold a variety of licences and thus are able to provide multiple services.

Some of the larger carriers in the Region include: McAnally Freightways which maintains seven branch offices and serves an additional 15 centres; Argosy Carriers Ltd., with two branch offices and five call stations; Husband Transport Ltd., with two branch offices and six other points served; and Inter-City Truck Lines Ltd. and Kingsway Transports Ltd., both with one terminal, as well as service to five and ten additional points, respectively. A special place in the Region's truck transportation system is occupied by Listowel Transport Lines Ltd., with a modern fleet of some 200 units. They started operations about 30 years ago as a strictly local venture and now serve 90 points,

including 21 branches and call stations.

2. Railways

The two major Canadian Railway companies, Canadian National and Canadian Pacific operate a total of 585 miles of main track within the Region, offering freight, express and passenger services. The CNR maintains 340 miles of track while the CPR accounts for the remaining 245 miles.

Passenger Services The main CPR line in the Region (Toronto-Galt-Windsor) has one train each way per day. The main CNR line (Toronto-Guelph-Stratford-London) has an average of four trains each way per day. The CNR also has four other passenger runs in the Region. Each of these averages one train per day each way: (i) Guelph-Fergus-Palmerston-Southampton; (ii) Guelph-Fergus-Palmerston-Owen Sound; (iii) Stratford>Listowel-Wingham-Kincardine; (iv) Stratford-Goderich.

The CNR has applied for discontinuance of all of the above passenger services, except for two runs per day on the Toronto-Guelph-Stratford-London line. Public hearings were held in Owen Sound on March 31, 1970 and in Guelph on April 8, 1970.

Freight Services CPR operations within the Region stress wayfreight. Two lines carry an average of at least four freight trains per week, connecting Guelph with Goderich and Hamilton. The Orangeville-Arthur-Mount Forest-Harriston-Wingham and the Erin-Fergus-Elora runs are

served only when full cars are required. An average of ten freight trains (over half are through traffic) per day travel through the Region on the main Toronto-Windsor line. Switching service and a piggyback terminal are provided at Galt.

Of special interest to local railway traffic demands are the wayfreight operations maintained by two CPR subsidiaries, the Grand River Railway Company and the Lake Erie and Northern Railway Company. The head office of both these railway companies is in Preston. There is one run each way per day from Preston to Hespeler, Preston to Galt to Paris, Preston to Galt to Simcoe, Preston to Galt to Brantford. There are two runs each way per day from Preston to Waterloo. The CPR Express' main distribution centre for the Region is Preston. Express freight services, by CNR or CPR, are available in all major cities, including those not on a railroad.

The main CNR line traversing the Region, Toronto-Guelph-Stratford-London, carries a daily average of two fast freight trains and four wayfreight. Seven other lines provide freight services: (i) Guelph-Palmerston-Owen Sound; (ii) Guelph-Palmerston-Southampton; (iii) Stratford>Listowel-Wingham-Kincardine; (iv) Stratford-Goderich; (v) London-Exeter-Clinton; (vi) Kitchener-Elmira; (vii) Brantford-Stratford.

Switching and distribution service is provided at Goderich, Stratford, Palmerston, Kitchener and Guelph. Piggyback terminals

integrating rail and highway transportation grids serve intra-regional and interregional needs and are located at Stratford, Guelph and Kitchener. Spur lines and sidings from the main railway lines are being built whenever needed to accommodate new industrial park developments, i.e. in Kitchener, Preston, Galt and Stratford.

3. Bus Service

The Region is serviced by three major bus companies. Gray Coach Lines Ltd., has three main routes in the eastern, northern and southern parts of the Region. These are: (i) Toronto-Guelph-Kitchener-Stratford-London (approximately six each way per day); (ii) Toronto-Galt-Kitchener-Stratford (approximately four each way per day); (iii) Toronto-Guelph-Durham-Owen Sound (approximately three each way per day).

Charterways Bus Line of London operates three main routes through the western part of the Region: (i) London-Clinton-Goderich-Wingham-Hanover (three each way per day); (ii) London-Grand Bend-Goderich-Kincardine-Owen Sound (two each way per day); (iii) London-Mitchell-Listowel (one each way on Saturday and Sunday).

Zimmer's Bus Line runs a commuter service between Stratford-Mitchell-Seaforth-Clinton and Goderich (three each way on weekdays).

4. Air Transportation

Although the Region does not have any major airports¹ within its boundaries, Toronto and London are sufficiently near to offer rapid connections with all major centres on the Continent and overseas. Both Toronto International and London airports are about 50 miles from the Kitchener-Waterloo area and can be reached conveniently via Highway 401. Private aircraft can find accommodation and service at a number of smaller airfields located at strategic points throughout the Region.

There are five licensed airports in Midwestern Ontario.² The Waterloo-Wellington Airport is operated by a commission representing the municipalities of Kitchener, Waterloo, Guelph, Galt, Preston and Hespeler. The runway facilities consist of two asphalt runways, measuring 3,700 and 4,100 feet, respectively. Flying clubs offer charter services at this airfield, while numerous companies and private aircraft owners also make extensive use of the available facilities. Specialized services include customs, runway lighting and a non-directional radio beacon.

¹Major airports are "all served by public carriers, and have extensive navigational aids (including lighting for night-time use) and terminal service facilities. Excluding far north points, all have 6,000 foot or more runways, sufficient for long-range jet aircraft." Economic Atlas of Ontario, op.cit., Plate 88, Inset I.

²The Federal Government licenses airports based on the quality of runway surface, i.e. length, type of paving.

Guelph Airport has an asphalt strip of 2,500 feet and is used primarily for training and charter purposes and offers accommodation for private aircraft.

At Goderich, Sky Harbour Air Services Ltd. operates three runways, the longest being an asphalt strip of 3,800 feet. The airport is utilized by the managing company for training and charter service, by individuals and business enterprises from the area for their private and corporate aircraft, as well as by a great many tourists during the summer months. The airport is fully equipped to provide all services associated with air transportation, including customs facilities, runway lighting and a non-directional beacon with associated instrument approach.

Two additional licensed airfields are located at Stratford and Listowel. The Festival City Airport in Stratford has a turf runway, 4,000 feet in length. The longest runway at the Listowel airfield is 2,600 feet and is also a turf surface.

In addition to these five licensed airports, there are many smaller airstrips utilized by private companies or farmers.

The Ontario Development Corporation owns an airport at Centralia Industrial Park. It has three asphalt runways, the longest being 5,017 feet.

Other airports, the length of longest runway and type of surface include the following:

Elmira	2,450 feet	asphalt
Exeter	2,300 feet	turf
Guelph	1,700 feet	grass
Grand Bend	2,600 feet	paved
Hensall	2,200 feet	turf
Mount Forest	1,900 feet	grass
Stratford	2,000 feet	turf
Stratford	1,800 feet	grass
St. Marys	2,600 feet	turf

The Midwestern Ontario Region is well endowed with a variety of airports to meet local commercial, industrial and recreational needs. In addition, the Region is in close proximity to the larger airports of Toronto and London.

The Survey of Manufacturing indicated that at present little use is made of air as a carrier of freight, except for "rush" orders. The airport facilities at Toronto or London are generally used for this purpose.

Should the need arise, many of the facilities at the Regional airports can be expanded to accommodate future increased demand.

5. Water Transportation

This mode of transport is limited to the Region's one major commercial harbour at Goderich.

A \$700,000 dredging program carried out in the early 1960's resulted in an overall harbour depth of 23 feet and the removal of Ship Island, previously a serious obstacle to vessel movement.

Traditionally, Goderich has been a storage and distribution point for grains and grain products entering Ontario from Western Canada. Until recently, these commodities constituted the bulk of all cargo handled. For storage purposes during the winter months as many as 35 barges can be accommodated in the harbour.

With the intensive production of salt beginning in 1960, the composition of commodities handled at the Goderich Port changed drastically. As can be seen from Table 5.1, salt accounted for less than one per cent of total cargo loaded and unloaded in both coastwise and foreign shipping in 1957. By 1967, this proportion had grown to about 60 per cent. The change resulted from two factors; the increased production of salt in the Region and the decreased imports of western grains as farmers in the Region began to raise more of their own animal feeds.

TABLE 5.1

CARGO HANDLED AT GODERICH HARBOUR, 1957 and 1967

<u>Commodity</u>	<u>% of Cargo Handled</u>	
	<u>1957</u>	<u>1967</u>
Wheat	41	15
Barley	19	9
Oats	28	8
Corn	-	5
Coal & Petroleum	5	1.5
Salt	1	60
Other Freight	<u>6</u> 100%	<u>1.5</u> 100 %

Source: Canada, Dominion Bureau of Statistics, Shipping Report.

The traditional relation of foreign and coastwise shipping has also been disrupted over the past few years. In 1957, the volume of cargo handled in coastwise shipping was about seven and one-half times as much as that in foreign shipping; ten years later, foreign cargo represented 43.7 per cent of the total volume loaded and unloaded. This shift has resulted from increased production of salt being shipped to the United States.

The same trend is reflected in the actual number of ships arriving and departing. Whereas in 1959, 33 vessels arrived and departed in international seaborne shipping, representing a net

registered tonnage of 87,986, the year 1967 witnessed an increase to 111 vessels for a total of 592,333 registered net tons. Coastwise shipping has remained stable over the same period.

Further expansion of production facilities at the salt mines may be expected to enhance the importance of the port to the Region's economy. The impact of the port will be even greater should it be utilized as a break-of-bulk point for the manufacturing of agricultural and other products, using the raw materials involved in international and coastwise trade.

Current Provincial Proposals and Studies for Future Improvements

1. Kitchener Area Highway Planning Study

In 1965, the Ontario Department of Highways initiated the Kitchener Area Highway Planning Study as one of its 20 area highway planning studies for the Province, to establish a completely integrated highway plan in the Province of Ontario for the next 20 years. It was also conceived in order to coordinate and integrate the urban studies being undertaken in Kitchener-Waterloo, Galt-Preston, Guelph, Stratford and Woodstock with the overall provincial highway system.

The Waterloo County Area Planning Board was at that time undertaking the preparation of an official plan for the County. The direct relationship between the data required by the Department of Highways and the Area Planning Board's work for the official plan

was obvious. Accordingly, the cooperation of the Waterloo County Area Planning Board was sought and the Waterloo-South Wellington Area Planning and Development Study was initiated. It is a comprehensive planning and development study that will estimate future socio-economic needs and develop an optimum land use plan. The transportation study is one of the major components.

The Kitchener Area Highway Planning Study covers an area of approximately 2,100 square miles consisting of the whole of Waterloo County and sections of Wellington, Halton, Wentworth, Brant, Oxford and Perth. It extends from Arthur and Highway 9 in the north, to Acton and Highway 401 in the east, to Burlington and Dundas in the southeast and Brantford in the south. The southern boundary extends as far west as Woodstock and thence north to include Stratford. The northwestern boundary runs parallel to Highway 23 from Highway 8 west of Stratford to meet with Highway 9 east of Palmerston.

The urban transportation studies mentioned earlier and the data being assembled by the Waterloo-South Wellington Study will all be incorporated to provide a basis for a comprehensive future transportation system.

In addition, the results of the Metropolitan Toronto and Region Transportation Study (M.T.A.R.T.S.), which was extended in October 1969 to cover a much broader area, Toronto-Centred Region, must be considered. The regional development plan for the Toronto-

Centred Region and the resulting transportation systems will exert a major influence in the Waterloo-South Wellington Area.

2. Lake Huron-Georgian Bay Area Highway Planning Study

This study is one of a series of regional studies being carried out throughout the province by the Department of Highways. The study area includes the counties of Bruce and Grey and parts of Huron, Dufferin, Wellington and Perth counties. The area is bounded on the north by Georgian Bay and on the west by Lake Huron. The other boundaries coincide with the boundaries of London, Kitchener and Barrie-Simcoe Area Highway Planning studies.

The Study was started in 1966 and should be released later this year.

3. London Area Highway Planning Study

This study, released in 1966, includes all of Elgin and Middlesex counties and portions of Huron, Perth, Oxford and Norfolk counties. In particular it makes recommendations relating to transportation needs of the St. Marys and Stratford areas.

4. Current Department of Highways Project Proposals

Extension of Hanlon Expressway (Guelph Area) This expressway would link the St. Clair Road to Highway 401, approximately 2 3/4 miles west of the present interchange of Highway 401 and Highway 6. The extension would be a four-lane divided highway with access

only at County Road 34 and the fourth concession, Puslinch Township. The expected completion date of the entire expressway would be in the mid to late 1970's.

The Highway 8 By-Pass of Preston and Galt The proposed four-lane divided highway with controlled access by-pass would start in Kitchener at the top of Freeport Hill. From there it would run south, crossing the Grand River in Preston on the flats east of Blair, skirt the western and southern city limits of Galt, crossing the Grand River again south of Galt, and then join Highway 8 southeast of Galt. Seven whole or partial cloverleafs are proposed.

Both of these proposals must receive confirmation by the Waterloo-South Wellington Area Study and the Department of Highways Planning Study for the area.

London to St. Marys Highway The London Area Highway Planning Study recommended a new direct arterial highway northeasterly from London to St. Marys to connect with the St. Marys by-pass of Highway 7 to Stratford. This will provide a consolidated service to several significant traffic flows which must at present travel routes involving greater time and mileage per trip. This new route will tie in with the proposed London-Sarnia Freeway, the Macdonald-Cartier Freeway and the London-St. Thomas Freeway. These highways will connect the major urban centres in southwestern Ontario.

5. Other Transportation Recommendations

"Waterloo Area Local Government Review" Dr. S. Fyfe made the following observations and recommendations on roads and public transit:¹

- (i) There is considerable evidence of a need for a more unified approach to land use planning and the inextricably related road patterns. Unless changes occur in policy-making and execution, and unless new financial arrangements for the provision of roads in the Waterloo Area are forthcoming, the best conceived, area-wide plans for roads -- and land use generally -- will fall on unproductive soil.
- (ii) Will local governments, however they may be reformed, be able to afford the kind of roads they need? Modern urban expressways are very expensive, with land acquisition matching construction costs dollar for dollar. They require, as well, technical competence that may be beyond the resources of some urban areas.
- (iii) Perhaps some better perspective of the urban environment is needed than that offered in circumstances where almost everyone travels by automobile. It is apparent that when people have a choice they will generally choose the convenience of the automobile.

¹Stewart Fyfe and Ron Farrow, Waterloo Area Local Government Review, Report of Findings and Recommendations, February, 1970.

- (iv) Unfortunately, in the present circumstances of overlapping and fragmented jurisdictions, it is difficult to look at the problem of highways as a coherent whole: the difficulties of seeing highways in the context of the needs of the community as a whole are almost insurmountable.
- (v) The existence of suburban roads commissions can no longer be justified. Their responsibilities should become part of the county roads department. If necessary, an adjustment should be made in road grants from the Province to offset the loss of revenue from the city.
- (vi) The fragmented nature of public transportation facilities in the Area is partly a result of the history of private firms providing inter-urban bus service in the Area. It is also an indicator of how strongly, or loosely, the various local communities are related to one another.
- (vii) The loose division of responsibility for transportation between utilities commissions, municipal roads departments and planning boards also inhibits consideration of transportation requiring a number of alternative modes, as a whole.

Midwestern Ontario Regional Development Council. Many transportation needs were mentioned in the Recommended

Programme for the Midwestern Ontario Development Area, 1969-1973.¹

Some of these needs have been mentioned in prior discussion while others are presently being fulfilled. A few additional comments follow:

- (i) There appears to be a growing need and potential for the development of increased business and industrial air passenger services, and to some degree, freight services in the Region. However, the extent of the need and the potential for expansion of existing facilities and services remain virtually unknown.

An analysis should be carried out of existing airports in the Region and their potential for development to accommodate increased usage by business and industrial air traffic and the introduction of air taxi service to Toronto International Airport. This should be followed by a study of present and projected demands.

- (ii) The port facilities of Goderich could be enlarged and modernized to accommodate water-borne bulk freight movements on the Seaway route and to generate additional freight movement to and from the western section of the Region, i.e. the development of a regional port. A comprehensive feasibility study should be carried out

¹Recommended Programme for the Midwestern Ontario Development Area, 1969-1973, prepared by Professor John T. Horton of the Planning and Resources Institute, University of Waterloo, in conjunction with the Midwestern Ontario Regional Development Council, December, 1968, pp. 33 and 34.

of the possibilities for developing the port of Goderich --
for handling water-borne bulk cargo and also providing
facilities for recreational uses (pleasure boat marinas).

CHAPTER VI

PHYSICAL LAND CAPABILITY

Summary

The following description of the Midwestern Ontario Region's land capability highlights a number of regional development issues:¹

- (a) A high proportion of the Region, characterized by single predominant resource capabilities, presents limited potential conflict between competing land uses.
- (b) With 24 per cent of the Province's Class I agricultural land, the Region is well endowed for agricultural specialization.
- (c) There are substantial areas in which the intensity of current agricultural production still falls well below the latent potential capability of the land.
- (d) The somewhat limited supply of potential sites suitable for intensive outdoor recreation probably will not meet the Region's future total demand for this class of recreation land.
- (e) A potential recreation and conservation corridor system exists in the Region, based primarily on

¹The Canada Land Inventory classification system for "capability" ratings ranges from Class I, the highest capability to Class VII, the lowest.

major river valleys, large zones of low capacity recreation potential and the Lake Huron shoreline.

- (f) There are several large areas where a combination of recreational and agricultural uses of the land would be compatible.
- (g) The Region has no significant commercial forest tracts. Existing woodlands are important open space assets in the potential regional recreation and conservation corridor system.
- (h) The Region shows a high potential for a wide range of wildlife species. Many of the wildlife sites are suitable for multiple resource uses.
- (i) The Region contains valuable sand, gravel, and limestone deposits. Many of these deposits are located in areas of potential conflict with competing urban land uses.
- (j) All lands having inherent environmental and/or physical hazards, such as poor drainage, organic soils, flood susceptibility or steep slopes, should be considered as part of the regional open space system.
- (k) There are a number of zones of low agricultural capability which have dispersed recreation capability for such land uses as hobby farms and low density

country estates.

- (1) Where possible the pattern of future regional growth should take into account the distribution of the major aquifers and their potential for pollution.
- (m) If development alternatives permit a conscious choice among new sites for residential or industrial use, the land capability analysis process can ensure that the loss of better soils or recreation sites is minimized and that ecological principles are taken into account.

Land Development Factors

The physical capability of an area of land is its potential for various types of resource development. However, the suitability for resource development is determined in relationship to the ability of the environment to sustain itself at a desired level of quality. Figure 24 illustrates the land capability of the Midwestern Ontario Region. When the map of present land use in Chapter II (Figure 4) is compared with the land capability analysis map on the following page, the relationship between the actual and the potential uses of the Region's natural resources can be clearly seen. The land capability analysis map does not show what the future land use pattern of the Midwestern Region will be, but rather what the different types of land in the Region are best suited for in terms of their physical characteristics.








The Midwestern Ontario Region's Land Capability Analysis Map¹ (Figure 24) illustrates the general pattern of regional resource potential and the implications for regional development. The map was prepared primarily from data in the Canada and Ontario Inventories. The Canada Land Inventory distinguishes seven classes of agricultural land, based upon the land's potential for mixed

¹The Land Capability Analysis Map was a product of combining land capability for agriculture and recreation with existing woodland areas, land of environmental and/or physical hazards, public open space and urban built-up areas. Each development factor was outlined on a separate transparent sheet and overlaid in the traditional sieve mapping manner.

MIDWESTERN ONTARIO DEVELOPMENT REGION LAND CAPABILITY ANALYSIS



LEGEND

	Agriculture (classes I & II)		Existing public open space
	Agriculture (classes I - III), recreation (class IV - VI), and conservation		Built-up urban area
	Intensive recreation (classes I - III)		Other capabilities
	Recreation (classes IV - VI) and conservation		

REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Canada Land Inventory

farming, particularly the quality of the soil. Attention has been focussed upon land of Classes I, II and III in the Midwestern Region. Recreational land is also divided into seven classes based upon the intensity of recreational use which an area of land can support. Classes I to VI were considered in the Midwestern Region. The various physical development factors have been assimilated into four general categories:

1. Agriculture. Areas of Class I and II agricultural land, in which there is no conflict with physical development factors.
2. Agriculture, Recreation and Conservation. Areas of Class I-III agricultural land which also have inherent Class IV-VI recreation capability. Adjacent woodlands larger than one hundred acres and areas containing environmental and/or physical hazards² for urban development are also included.
3. Intensive Recreation. Areas of Class I-III recreation land.
4. Recreation and Conservation. Areas of exclusive Class IV-VI recreation capability, plus adjacent woodlands larger than 100 acres and areas containing

²All lands having inherent environmental hazards include those having poor drainage, organic soils, flood susceptibility or steep slopes.

environmental and/or physical hazards for urban development.

The Land Capability Analysis Map indicates where land of different development characteristics lies and the territory within which the best options for resource development exist. The Map assists in identifying areas with the highest capability for various kinds of development; that is, it illustrates the intrinsic suitability of the land for certain uses. It also provides an indication of the amount of land available for different uses.

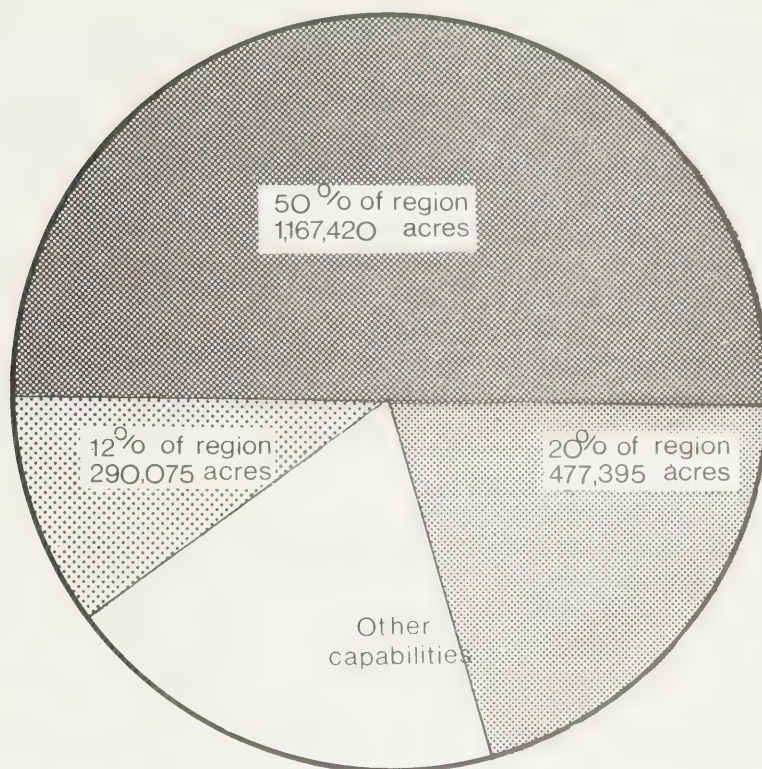
Agricultural Potential The Midwestern Ontario Region has a prosperous agricultural economy which is an important provincial agricultural asset. The land capability analysis indicates that the Region is well endowed for agricultural production from a physical capability point of view.

The amount of Class I and II land indicates the overall capability of the Region for agricultural production.¹ As shown in Figure 25, the Midwestern Region has 24 per cent of the Province's Class I agricultural land (1,167,420 acres) and 10 per cent of the Class II land (477,395 acres). Seventy per cent of the Region is covered by Class I or II agricultural land. Table 6.1 shows the county and township distribution of lands of high agricultural




¹Land of high capability for agriculture includes Classes I and II from the Canada Land Inventory Soil Capability for Agriculture maps. These soils are deep, well drained, hold moisture well and have only a slight limitation to the high production of a wide range of crops.

MIDWESTERN ONTARIO DEVELOPMENT REGION

PROPORTION OF AGRICULTURAL LAND BY CAPABILITY CLASS REGIONAL & PROVINCIAL



CRITERIA OF AGRICULTURAL LAND CAPABILITY

AGRICULTURE CAPABILITY CLASS	% OF PROVINCIAL TOTAL	
 CLASS I LAND	24%	Soils in this class have no significant limitations in use for crops
 CLASS II LAND	10%	Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices
 CLASS III LAND	9%	Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices

NOTE - CLI Agriculture Classes range from I through VII

capability.

Several major areas of high agricultural potential stand out on the Land Capability Analysis Map. These are areas in which there is no conflict between Class I and II agricultural capability and other potential resource uses. A large amount of high capability agricultural land is also included in the agriculture, recreation and conservation category.

The largest and most continuous area of Class I and II land is in the central part of the Region. It includes a major portion of the townships of Elma, Logan, Mornington and Ellice and smaller portions of adjacent townships. A smaller, more broken area of high agricultural potential surrounds the City of Stratford. Another area is situated between Guelph and Elmira. A strip of land along the Lake Huron shoreline, varying in width from three miles at the centre to six miles in the north and south, is also an important potential agricultural zone.

In addition, there are many smaller areas of high agricultural capability. However, the small size of these areas and their rather dispersed location detracts from their suitability for intensive agricultural production. This is especially true in the north and northeast section of the Region where a large portion of the land is Class I intermixed with lower capability agricultural land and woodlands.

LAND CAPABILITY FACTORS, TOWNSHIP ACRES & PERCENTAGES, MIDWESTERN ONTARIO REGION

	AGRICULTURE CAPABILITY ¹			RECREATION CAPABILITY			AGRICULTURE AND RECREATION CAPABILITY		EXISTING WOODLAND AREA
	Agriculture I ²	% Agriculture I ³	(2)	Agriculture III ⁴	% Agriculture III ⁴	(3)	Recreation I-III	% Recreation IV-VI	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HURON									
Ashfield	421,175	51	202,750	24	92,515	11	3,239	58,005	07
Colborne	20,140	30	39,360	58	5,080	08	676	1,676	01
Godrich	12,270	33	15,425	42	4,980	13	1,477	10,343	03
Grey	21,260	39	22,910	42	7,510	14	544	1,089	02
Hay	35,820	54	15,425	23	4,875	07	-	2,631	04
Howick	17,025	31	23,555	43	3,260	06	542	1,083	02
Hullett	43,355	65	2,665	04	8,135	12	-	4,016	06
McKillop	33,780	52	20,990	32	5,520	08	-	3,276	05
Morris	41,795	78	5,125	10	2,115	04	-	4,840	09
Stanley	27,920	55	3,660	07	6,265	12	-	22,334	44
Stephen	18,890	32	16,770	37	5,825	13	-	5,939	13
Tuckersmith	31,910	75	28,155	49	5,440	09	-	1,153	02
Turnberry	22,555	60	4,500	07	6,295	15	-	3,460	06
Usborne	29,830	70	2,755	06	4,070	11	-	14,004	33
Wawanosh, East	19,325	45	1,540	04	9,340	22	-	13,999	07
Wawanosh, West	23,810	55	1,220	03	6,785	16	-	3,434	08
					7,020	16	-	18,576	43
							-	19,877	46
PERTH									
Blanshard	314,850	59	124,390	23	50,485	09	-	6,400	01
Downie	30,315	61	4,285	09	11,035	22	-	11,874	24
Easthope, North	28,650	60	12,030	25	3,090	07	-	5,690	12
Easthope, South	24,635	58	2,625	06	8,775	21	-	8,087	19
Ellice	16,330	66	3,325	13	3,640	15	-	1,725	07
Ellice	23,115	44	23,105	40	3,555	06	-	572	01
Elma	37,195	54	23,680	35	560	01	-	2,739	04
Fullarton	27,510	66	5,660	14	5,680	14	-	8,385	20
Hibbert	29,965	71	2,895	07	5,735	14	-	5,941	14
Logan	22,705	40	29,505	52	2,510	04	-	3,996	07
Mornington	30,925	59	13,315	25	2,230	04	-	7,330	14
Wallace	41,505	77	3,965	07	3,675	07	-	7,570	14
							-	4,866	09
WATERLOO									
Dumfries, North	89,040	29	75,980	25	45,520	15	689	32,119	10
Waterloo	5,410	13	15,940	38	4,010	09	-	14,802	35
Wellesley	24,800	36	22,070	29	8,320	11	-	5,241	07
Wilmet	22,250	32	10,370	15	19,580	28	-	22,968	34
Woolwich	20,200	37	17,590	26	8,970	13	689	2,088	03
					4,640	09	-	22,727	33
							-	4,860	60
WELLINGTON									
Arthur	342,355	53	74,275	11	101,555	16	893	128,185	20
Eramosa	50,855	76	6,920	10	3,390	05	-	8,746	13
Erin	21,505	45	5,400	11	9,485	20	-	22,238	47
Garafra, West	17,165	23	3,535	05	23,285	31	-	6,624	14
Guelph	28,315	57	5,295	11	8,495	17	-	32,093	43
Luther, West	31,820	52	8,840	22	6,150	15	-	10,912	22
Maryborough	41,115	72	6,720	13	2,775	05	-	17,874	45
Minto	33,705	49	9,375	13	5,900	10	-	5,054	10
Nichol	20,525	71	2,110	07	4,460	15	-	9,088	16
Peel	52,780	71	2,600	04	14,590	20	-	7,320	10
Pikington	18,450	62	4,240	14	2,150	07	-	5,801	20
Puslinch	3,330	06	15,520	26	14,095	24	297	11,078	15
							596	12,185	41
							01	892	03
							01	8,933	15
							52	14,293	24

¹ This category includes the land listed under Agriculture and Recreation Capability. Figures for Agriculture Capability are taken from Canada Land Inventory tables. Other figures are approximate.

² According to the Canada Land Inventory, Class I soils have no significant limitations in use for crops. They are deep, have good water-holding capacity and in the virgin state were well supplied with plant nutrients. They are moderately high to high in productivity for a wide range of field crops.

³ Class II soils have moderate limitations that restrict the range of crops. They may require more intensive conservation measures, tillage practices and special soil-conserving systems than Class I soils.

⁴ Class III soils have moderately severe limitations restricting the range of crops, the timing and ease of tillage, planting and harvesting and they need special methods of conservation.

⁵ According to the Canada Land Inventory, Class I-III recreation lands have a very high to moderately high capability for outdoor recreation. That is, they have a natural capability to engender and sustain a very high to moderately high total annual use, based usually on intensive or moderately intensive activities.

⁶ Class IV-VI lands for recreation have moderate to low capability for outdoor recreation. They have a natural capability to engender and sustain low total use based on dispersed activities.

The locational attributes of agricultural land near the Kitchener-Waterloo urban complex and the presence of an agriculturally oriented Mennonite Community have had a positive influence on the actual intensity of agricultural production (see Figure 12). The intensity of agricultural land use appears to be greater than the land capability would indicate. In contrast, several townships situated in the central part of the Region have high agricultural capability but show only moderate intensity of production. This relationship suggests that there are areas of latent agricultural potential and, therefore, possible areas of potential resource growth.

There is a close relationship between the amount of Class I and II agricultural land (70 per cent of the Region's land area) and the amount of improved farmland (73 per cent of the Region's land area in 1966). However, discrepancies appear when the Region is viewed on a county basis.

Assuming that all Class I and II agricultural land will be used for improved cropland before lower capability land is used, Table 6.2 indicates the following observations:

1. In Huron County there are 3500 acres of unimproved Class I and II agricultural farmland. This would suggest that Huron County has unused agricultural

potential.

2. Perth County has 18,000 acres more of improved farmland than it has of Class I and II agricultural land. Certain townships have considerable areas of Class III land which have been improved.
3. Wellington County has 40,000 acres more of improved farmland than it has of Class I and II agricultural land. This would indicate that a large amount of Class III agricultural land is being utilized.
4. In Waterloo County, there are 15,000 acres of improved farmland which are not accounted for within the agricultural land capability Classes of I through III. This indicates that land of Class IV or lower has been improved. By far the most anomalous township is Woolwich where some 10,500 acres, or ten per cent of the area of that township, are improved farmland not included within Classes I-III of the Canada Land Inventory. It would appear that if Class IV agricultural land can be improved, resulting in fairly intensive production in Waterloo County, then there exists large areas of at least Class III land in the other counties where future expansion in agricultural production could take place.

TABLE 6.2

RELATIONSHIP OF IMPROVED FARMLAND, 1966, TO SOIL CAPABILITY, TOWNSHIPS,
MIDWESTERN REGION

	IMPROVED FARMLAND 1966 (Acres)	% of Town- ship	Class I	% of Town- ship	Class II	% of Town- ship	Class I & II	% of Town- ship
HURON	620,472	75	421,175	51	202,750	24	623,925	75
Ashfield	51,919	78	20,140	30	39,360	58	59,500	88
Colborne	24,145	68	12,270	33	15,425	42	27,695	75
Goderich	35,339	61	21,260	37	22,910	42	44,170	81
Grey	48,328	73	35,820	54	15,425	23	51,245	77
Hay	39,997	72	17,025	31	23,555	43	40,580	74
Howick	50,904	72	43,355	65	2,665	04	46,020	69
Hullett	44,471	80	33,780	52	20,990	32	54,770	84
McKillop	47,385	87	41,795	78	5,125	10	46,920	88
Morris	41,282	73	27,790	55	3,460	07	31,250	62
Stanley	35,944	76	21,820	48	16,770	37	38,590	85
Stephen	46,164	76	18,690	32	28,155	49	46,845	81
Tuckersmith	34,524	81	31,910	75	2,945	07	34,855	82
Turnberry	24,476	67	22,555	60	450	01	23,005	61
Usborne	39,341	89	29,830	70	2,755	06	32,585	76
Wawanosh, East	29,414	68	19,325	45	1,540	04	20,865	49
Wawanosh, West	26,839	63	23,810	55	1,220	03	25,030	58
PERTH	456,893	85	314,850	59	124,390	23	439,240	82
Blanshard	40,634	86	30,315	61	4,285	09	34,600	70
Downie	41,389	82	28,650	60	12,030	25	40,680	85
Easthope, North	35,530	80	24,635	58	2,625	06	27,260	64
Easthope, South	19,791	81	16,330	66	3,325	13	19,655	79
Ellice	46,790	82	25,115	44	23,105	40	48,220	84
Elma	57,144	83	37,195	54	23,680	35	60,875	87
Fullarton	36,982	88	27,510	66	5,660	14	33,170	80
Hibbert	35,722	83	29,965	71	2,895	07	32,860	78
Logan	52,729	94	22,705	40	29,505	52	52,210	92
Mornington	46,203	91	30,925	59	13,315	25	44,240	84
Wallace	43,979	85	41,505	77	3,965	07	45,470	84
WATERLOO	225,536	75	89,040	29	75,980	25	165,020	54
Dumfries, North	27,253	63	5,410	13	15,940	38	21,350	51
Waterloo	47,332	68	16,300	22	22,070	29	38,370	51
Wellesley	55,892	83	24,880	36	10,370	15	35,250	51
Wilmot	49,727	75	22,250	32	17,590	26	39,840	58
Woolwich	45,332	82	20,200	37	10,010	19	30,210	56
WELLINGTON	456,602	70	342,355	53	74,275	11	416,630	64
Arthur	51,466	77	50,855	76	6,920	10	57,775	86
Eramosa	30,653	65	21,505	45	5,400	11	26,905	56
Erin	43,596	59	17,165	23	3,535	05	20,700	28
Garafraxa, West	36,865	78	28,315	57	5,295	11	33,610	68
Guelph	28,280	72	20,790	52	8,840	22	29,630	74
Luther, West	35,427	69	31,820	63	6,720	13	38,540	76
Maryborough	46,995	82	41,115	72	3,720	07	44,835	79
Minto	50,812	71	35,705	49	9,375	13	45,080	62
Nichol	21,457	76	20,525	71	2,110	07	22,635	78
Peel	61,277	81	52,780	71	2,600	04	55,380	75
Pilkington	23,141	75	18,450	62	4,240	14	22,690	76
Puslinch	26,633	43	3,330	06	15,520	26	18,850	32

Note: A.R.D.A. and D.B.S. data on township areas not strictly comparable.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1966 (Ottawa: Queen's Printer), Tables 27 and 13.

A.R.D.A., Canada Land Inventory, Ontario Statistics, Soil Capability for Agriculture, Special Tabulation, 1969.

Agriculture, Recreation and Conservation Potential In addition to areas of predominant agricultural capability, the Land Capability Analysis Map and Table 6.1 reveal the location and extent of major zones of overlapping agricultural, recreational and conservation potential. These are areas which combine multiple and compatible potential uses and therefore should be considered of high priority for intensive resource development.

The greatest significance should be attached to the agriculture, recreation and conservation area north of Kitchener-Waterloo centred on Woolwich Township. This area is, at present, one of the most intensive agricultural areas in the Region, and one which may experience severe urbanization pressures in the not too distant future.

A large amount of agriculture, recreation and conservation land is also found in the northwest part of the Region. The townships of Morris, Turnberry, and East and West Wawanosh have over 72,000 acres of this type of land. The emphasis in this area could be on less intensive agricultural activities in comparison to adjacent areas of higher recreation and agriculture capability.

Both of the above areas have a significant amount of Class I agricultural land. Other such multiple resource capability areas have only small amounts of Class I land.

Intensive Recreation Potential A notable feature of recreation potential in the Midwestern Region is the relative absence of high capability recreation areas. As shown in Figure 24, there are only nine small areas of Class I-III capability for outdoor recreation.¹ These intensive recreation areas comprise approximately 2,450 acres of land and 11 miles of Lake Huron shoreline. An additional four small areas are already in public open space.

The intensive recreation areas which should function as nodes in the total regional recreation system are located in two general zones:

- (a) Along the Lake Huron shoreline.
- (b) Two small areas near the Kitchener-Waterloo urban complex.

The location, size and natural featural features of each site are summarized in Table 6.3.

Recreation and Conservation Potential Class IV-VI recreational capability comprises the major part of the Region's recreation and conservation open space system. This recreation land has a moderately low to low capability for dispersed outdoor recreation activities.

¹Class I-III land has a high to moderately high capability rating for outdoor recreation based usually on intensive or moderately intensive activities.

TABLE 6.3

POTENTIAL INTENSIVE RECREATION AREAS¹

<u>Zone</u>	<u>Classification & Location</u>	<u>Size²</u>	<u>Recreation Feature</u>
1. <u>Lake Huron Shoreline</u>	Class I ³ area in Stephen Township north of the Town of Grand Bend	1,000 acres and 5 miles of Lake Huron shoreline	- beach activities are the dominant feature with lodging and viewing being subordinate features. This is the only Class I area in the Region.
	Class III ⁴ area in Hay Township near St. Joseph	100 acres and 0.4 miles of Lake Huron shoreline	- lodging is the dominant feature and beach activities a subordinate feature
	Class III area in Goderich Township north of Bayfield	200 acres and 1.2 miles of shoreline	- beach activities are the dominant feature with lodging as a subordinate feature. One small area is adjacent to Point Farms Provincial Park
	Several Class III areas in Colborne Township	300 acres and 2.5 miles of shoreline	- beach is dominant feature with lodging, physical landscape, organized camping and viewing as subordinate features
	Class III area in Ashfield Township near Port Albert	500 acres and 2 miles of Lake Huron shoreline	- beach is dominant feature with lodging, viewing, family boating as subordinate features
	Class III area in Colborne Township on the Maitland River	50 acres	- viewing is dominant feature with the physical landscape as a subordinate feature
2. <u>Kitchener-Waterloo Area</u>	Class III area in northeast corner of Wilmot Township around Sunfish Lake	200 acres	- lodging is dominant feature and upland wildlife a subordinate feature
	Class II ⁵ area in Guelph Township	100 acres	- wetland wildlife is dominant feature. Angling and family boating are subordinate activities

¹Only those areas which are not used as public open space are listed.

²Acreage and shoreline figures are approximate.

³Class I land has a very high capability for outdoor recreation.

⁴Class III land has a moderately high capability for outdoor recreation.

⁵Class II land has a high capability for outdoor recreation.

Source: The Canada Land Inventory, Recreation Land Capability Maps, Richmond Hill, 1969.

There are three major areas of recreation potential in the Region: The Lake Huron shoreline, large zones of low intensity recreation capability land in the interior, and a linking network of river valley corridors (See Table 6.4). The following major river valleys and their tributaries form the essential framework and linkages within each of the major conservation, recreation open space zones: the Thames, Ausable, Bayfield, Maitland, Conestogo, Nith, Grand, Speed and Eramosa Rivers. Angling, upland wildlife, physical landscape features, viewing and canoe tripping are the dominant recreation features and activities associated with the corridors.

Table 6.4 indicates that Puslinch and Erin townships in the southeastern part of the Region each have over 30,000 acres of land classified as suitable for such low intensity recreation and conservation uses as hobby farms and country estates. These types of land will require fairly sophisticated degrees of management in order to retain the low quality environmental levels which they possess. In the northwest, the townships of East and West Wawanosh have a total of over 27,000 acres of this same class of conservation and recreation land.

TABLE 6.4

Major Recreation and Conservation Open Space Zones

<u>Location</u>	<u>Type of Activities</u>
1. <u>Lake Huron Shoreline</u>	The sections of the Lake Huron shoreline not included as intensive recreation are Class IV land capability for recreation and conservation. The dominant activities are beaches, lodging and viewing, with topographic features as a secondary feature throughout the zone.
2. <u>River Valley Network</u>	
Maitland River Valley and tributaries	<p>This important recreation and conservation corridor links the Lake Huron shoreline to a very large area of recreation potential in the northwestern part of the Region and also provides a framework for this particular area. This system extends eastward to provide a link with other valley corridors, notably the Conestogo, which in turn, connects several major recreation and conservation zones in the eastern part of the Region.</p> <p>The inland parts of the Maitland Valley system are mainly Class VI areas for angling with some upland wildlife. As the streams approach Lake Huron, their capability rating increases to Class V and ultimately to Class IV with canoeing and the physical landscape as important features in addition to angling.</p>
Lucknow and Bayfield River Valleys	<p>The Lucknow and Bayfield River Valleys form a part of the recreation system linking the Lake Huron shoreline to inland areas. These valleys offer Class V and VI areas for angling, topographic patterns and upland wildlife.</p>

Major Recreation and Conservation Open Space Zones (Cont'd)

<u>Location</u>	<u>Type of Activities</u>
Ausable and Thames River Systems	The Ausable and Thames River corridors are significant in that they are the only areas of important recreational and conservation potential in the south-western portion of the Region. The two corridors are independent and do not provide direct links with other recreation and conservation features. They are mainly Class VI for angling and upland wildlife. The Avon and Thames River, near St. Marys, are Class V for angling and canoeing.
Conestogo, Grand, Eramosa and Speed River Systems	The Conestogo, Grand, Eramosa and Speed River corridors form the eastern part of the corridor network and link up to the western part of the Region via the Conestogo and Maitland systems. They connect a number of large recreation and mixed agriculture, recreation and conservation zones in the eastern part of the study area. The Conestogo corridor is mainly Class V for angling and canoeing. The area around Conestogo Lake is Class IV for a variety of activities such as angling, canoeing, beaches, viewing, lodging, organized camping and family boating. The Grand River corridor is generally Class V for angling and canoeing with large areas of topographic patterns. Certain areas of high capability stand out. Belwood Lake has one area of Class III land on the north-west shore, the remainder being Class IV. Organized camping, viewing, beaches, lodging and wetland wildlife are some of the recreation activities available. Between Kitchener and Galt, there are several stretches of Class IV land for canoeing, viewing and angling. This is a particularly important area since it is in close proximity to most of the Region's population. The Speed and Eramosa Rivers are mainly Class V areas for angling, upland wildlife and topographic patterns.

TABLE 6.4

Major Recreation and Conservation Open Space Zones (Cont'd)

<u>Location</u>	<u>Type of Activities</u>
3. Other Major Areas	There are a number of large recreation and conservation areas in the Region which have a moderately low to low capability rating, mainly Class V and VI land. These are important areas to be conserved for regional open space. They are generally linked together by river corridors which, in turn, are areas of higher capability rating. Small special feature areas are often of prime importance. For example, the covered bridge at West Montrose (a Class IV area) is the only structure of its kind remaining in Ontario.
Northwestern part of the Region between Goderich and Wingham	This is the largest single recreation and conservation area in the Midwestern Region. Activities are mainly limited to upland wildlife, topographic patterns and cultural landscape. The majority of this area is Class VI with some small pockets of Class V Land.
Smaller area north and west of Gorrie and Wroxeter	This is an area of Class VI land for topographic patterns, cultural landscape and upland wildlife.
Four large areas in southeast part of the Region around Guelph, Kitchener-Waterloo and Galt	Particular importance can be attached to these areas because of their relative high access to major urban centres. Classes V and VI land for topographic patterns, cultural landscape and upland wildlife are found in this area.

Regional Capability for Wildlife Production

The Midwestern Ontario Region shows a high degree of potential for a wide range of wildlife species.

The following groups of wildlife capability were selected to represent all wildlife species common to the Region. These were grouped to form an overall capability rating for wildlife production:

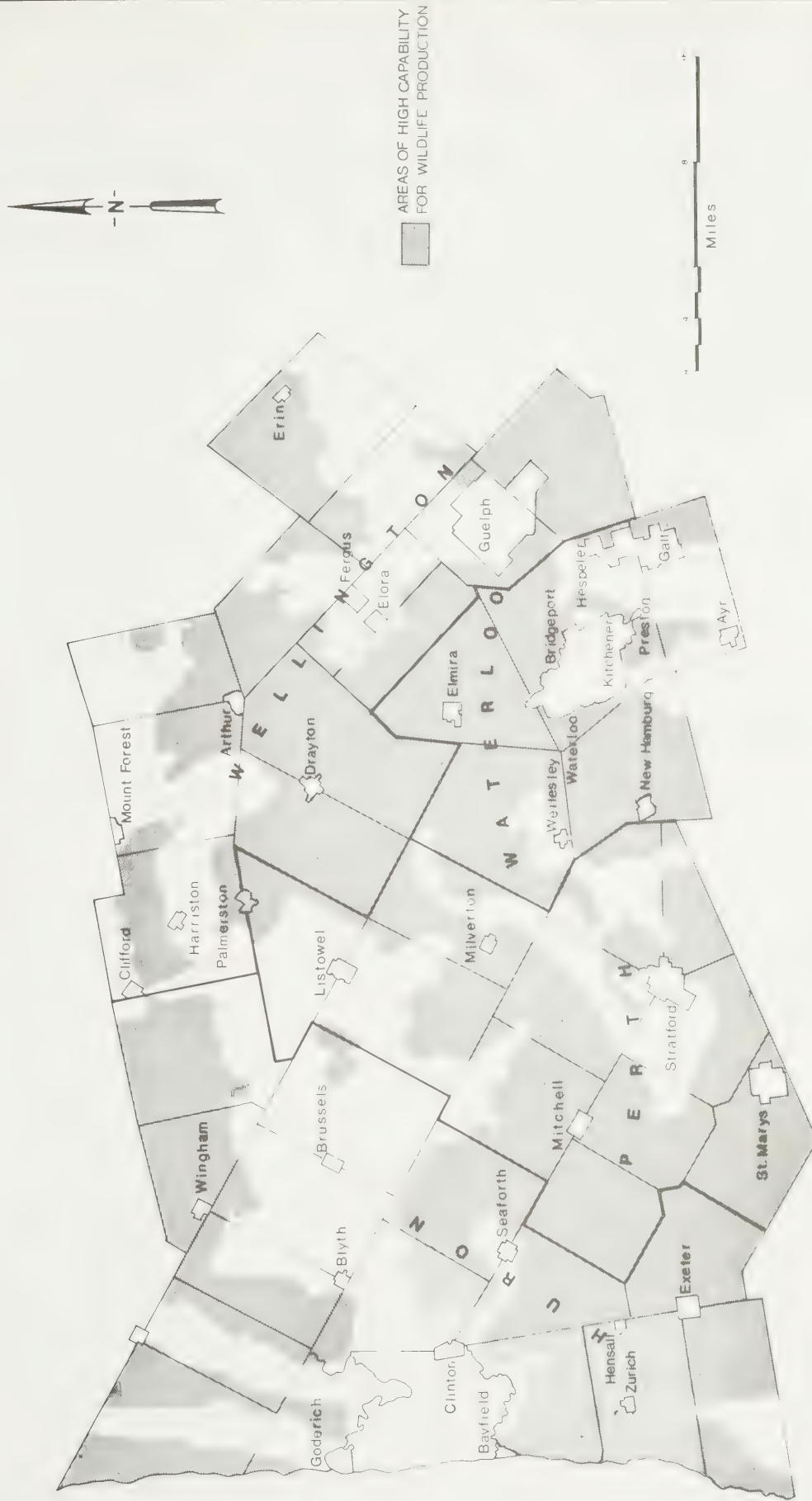
- (a) Woodland Wildlife, Class III land capability for whitetail deer
- (b) Waterfowl, Class I, II and III land capability for ducks. Class I and II land capability for geese.
- (c) Farmland Wildlife, Class I and II land capability for Hungarian partridge.

The combined wildlife potential of the Region is illustrated in Figure 26. It is evident that a large percentage of the land area of the Region has a high capability for some form of wildlife, though little of this is today being realized.

Wildlife capability is compatible with agriculture and recreation potential. It can therefore be considered as a positive additional factor enhancing the overall regional significance of certain conservation, recreation and agriculture zones depicted on Figure 24. For example, the prime recreation, conservation and agriculture zone north of Kitchener-Waterloo also has a high potential for wildlife production. The major recreation zones in

MIDWESTERN ONTARIO DEVELOPMENT REGION

WILDLIFE CAPABILITY



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Ontario Land Inventory, Dept. of Lands and Forests

West Wawanosh, Erin and Puslinch townships exhibit a similar relationship. Special significance should be attached to areas in which there is an overlap between compatible uses such as recreation, conservation, agriculture and wildlife.

Two major zones of high combined wildlife capability emerge:

- (a) The southern part of Huron and Perth counties
- (b) The northern and western part of Waterloo County, extending into Wellington County to include nearly all of Peel and Maryborough townships, and part of Arthur, West Luther and West Garafraxa townships.

Several smaller areas are also evident:

- (a) Puslinch Township
- (b) The northern part of Erin Township
- (c) East Wawanosh, Turnberry and Howick townships in the northern part of Huron County.

Existing Woodlands

The Midwestern Region has no commercial forest tracts of provincial or regional significance. Table 6.1 gives a statistical breakdown of the regional distribution of woodlands on a township basis. Over one-third of the townships within the region have five per cent or less of their area taken up by existing woodland. There are no townships with more than one-fifth of their total area in existing woodland. However, existing woodland areas are

generally considered an important regional open space asset. They are usually found in association with poorer agricultural soils, especially organic soils, and river valleys. All major woodlands which are found in combination with recreation potential have been assigned a recreation and aesthetic value. As a result, woodland areas over 100 acres in size have been incorporated into the recreation, conservation and agriculture combinations presented in Figure 24.

Aquifers

Wherever possible the pattern of future regional growth should take into account the distribution of the major aquifers and their potential for pollution. Figure 27 gives a general outline of the distribution of major developed water-bearing zones and anticipated aquifer pollution hazard. The final location of any waste disposal operation should be based on a thorough study of the total hydrogeological environment.

Environmental Hazards

The recreation and conservation designation of the Land Capability Analysis map includes all lands having inherent environmental hazards for urban development such as poor drainage, organic soils, flood susceptibility, steep slopes, or any other physical condition which leads to the deterioration or degradation of the

MIDWESTERN ONTARIO DEVELOPMENT REGION AQUIFERS WITH HIGH POLLUTION POTENTIAL



Figure 27

environment. Lands so designated should be maintained primarily for preservation and conservation of the natural land and/or environment.

In the Midwestern Region most of the environmental hazard areas are located near the recreation corridors formed by the major river valleys.

Mineral Resources

The Region's mineral resources are mainly limited to surface deposits of sand and gravel, as overburden is generally too thick for the underlying bedrock to be an economic resource. Exceptions to this are limestone quarries south of St. Marys and several areas in Guelph and Eramosa townships where the overburden is shallower.

Sand and gravel resources, are widely distributed throughout the Region. However, certain areas of concentration stand out. The southeastern quarter has the largest concentration, especially North Dumfries and Puslinch townships. Certain northwestern townships, notably Morris, East Wawanosh, Colborne and Goderich also have significant concentrations.

CHAPTER VII

POTENTIAL CENTRES OF OPPORTUNITY

The Growth Centre Concept

In Ontario today, the greatest employment opportunities and the most extensive range of social and cultural amenities are to be found mainly in the larger urban areas. The Province has been undergoing a rapid transformation from a rural to an urban society. This shift emphasizes the close relationship between a substantial number of the goals and objectives of the Regional Development Program outlined in Chapter VIII and the future form of urban growth.

The trend towards urbanization is definite and world wide - probably the largest migration movement taking place today in Ontario is from rural and small urban places to the larger urban centres. With inadequate means of attracting large-scale manufacturing, wholesaling and cultural facilities, most small urban places are unable to provide the sophisticated services demanded by people today.

The Province recognizes the advantages of larger urban concentrations as implied by the growth centre¹ principle. A growth centre is defined as an urban core and its surrounding service area

¹"Growth centres" can be used synonymously with "growth points."

capable of either spontaneous or potential growth of population, economic activity and income.¹

Ideally, the benefits of growth are transmitted from the larger centre to its surrounding territory so that the advantages of urban life are shared among the people of smaller centres and rural areas. The advantages of urban concentration and hence growth centres include a maximum utilization of investment, improvement in the range of services likely to be available to people and industry, exploitation of external economies, the diversification of economic activity, and the opportunity and capacity to withstand the effects of future structural changes and cyclical downswings in local employment.²

Growth centres will be chosen with careful regard to (1) the functions they are expected to carry out in their respective performance areas, and (2) a provincial policy of "nodalized decentralization". Areas of high performance obviously do not need measures to stimulate growth. Major development problems are associated with space adjustment and conservation of both human and natural resources. Overspill and interceptor growth points may be necessary in such areas to transform growth, especially of rapidly urbanizing places, into appropriate community forms and locations. In contrast, low perform-

¹Thoman, R. S. paper entitled Regional Development in Ontario, October 7, 1967 and E.F.T.A. Final Report by the Working Party on Regional Development Growth Centres, March 1968.

²E.F.T.A. Report. op.cit., p.6.

ance areas may need assistance, if growth is to take place.

There are three types of growth points in the Province, involving a three-tiered hierarchy: primate, linked and strategic centres.

In areas where growth is above the provincial average, primate and linked centres will be used to channel growth into appropriate types and areas. The primate centres are metropolitan areas. Linked centres are located outside effective journey-to-work zones of primate centres, but functionally are tied, in whole or in part, to the primate centres. Linked centres have their own journey-to-work zones.

The principle of nodalized decentralization is applicable here and two major benefits can result: (1) current urban trends can be properly structured, and (2) the foundation can be laid for carefully planned, larger urbanized areas in the future.

The principle of nodalized decentralization can also be applied to areas where growth is at or below the provincial average. Where dynamic primate centres are close by, this application mainly will take the form of linked centres, as described above. Where primate centres are neither close nor dynamic, however, stimulation may be necessary. Primate centres offer the best opportunities to stimulate growth in lagging areas.

Although primate and linked centres can provide employment and living accommodation for most of Ontario's rapidly urbanizing population, they will not fulfil completely our objective of encouraging each region to reach its socio-economic potential. They also will not fulfil completely our objective of enhancing the quality of life in each region. A third level of growth centre may be needed. This is the strategic growth point, which is not linked predominantly to any metropolitan area, but which provides employment opportunities for people in Ontario who otherwise might not find work easily.

All in all, the total pattern of growth points and their journey-to-work zones should comprise a geographical mosaic which would offer employment opportunities to essentially all urban and rural people in the Province.

For the Midwestern Ontario Region, 23 centres were selected for evaluation as potential growth centres. Kitchener was grouped with Waterloo, and Galt and Preston with Hespeler because, for all intents and purposes, they are functional entities.

In order to assess urban places as centres for growth and centres of potential investment opportunity, several factors were evaluated. The first involved the past rate of population growth, particularly of the centre but also of its associated trade area.

The growth of urban centres was analysed for two sub-regions:

the rapidly growing Waterloo-Wellington area, and the slower growth counties of Huron and Perth.

A second factor was the spheres of influences of these centres, which involved journey-to-work patterns, the size of each community and its associated trade area, the function that each centre serves in the Region, and lastly the influence of Provincial and Federal Government services in each community.

A third factor analysed the sectoral and industrial mix of centres.

A fourth factor was concerned with infrastructure - water and sewage facilities, the availability of industrial land, accessibility by various modes of transport, and the recreational and cultural facilities offered by the various centres.

Criteria for the Selection of Centres of Opportunity

1. Growth Rates of Urban Population

Growth rates of urban population are helpful in understanding the dynamics of social and economic change that have taken place in an urban centre. For a consideration of the rates of urban growth for the 1951-1966 and 1961-1966 periods, see Chapter III.

In this section, the growth of urban centres is analyzed for two sub-regions: the rapidly growing Waterloo-Wellington area,

and the slower growth counties of Huron and Perth.

Waterloo and Wellington counties are moderately high performance areas in social and economic terms, in comparison with the Province as a whole. For the 1961 to 1968 period, the rates of growth of the centres and their share of the growth which occurred in the two counties are listed in Table 7.1.

The largest centres (Kitchener-Waterloo, Guelph, Galt-Preston-Hespeler) have had the fastest growth rates, together accounting for over 94 per cent of the total two-county increase in urban population during the 1961 to 1968 period. Three fast growth centres, Bridgeport, Elmira, and Fergus, accounted for another four per cent of the total urban growth in Waterloo and Wellington counties. Significantly, these latter three centres are growing at rates much above the provincial norm and are each within commuting range of Guelph or Kitchener-Waterloo. Their growth, therefore, might largely be explained by the dormitory functions that these centres perform.

The other centres, accounting for two per cent of the total urban growth in these counties, are outside the commuting zone of the three largest urban complexes. Arthur and Harriston are growing at rates below the provincial average and Mount Forest and Palmerston at about the provincial norm. New Hamburg and Ayr are exceptions, but a relatively higher rate of growth is explained

TABLE 7.1

GROWTH RATES OF URBAN CENTRES, AND SHARES OF TOTAL URBAN
GROWTH, WATERLOO AND WELLINGTON COUNTIES, 1961 - 1968

<u>Centre</u>	<u>Per Cent Growth of Each Urban Centre 1961-1968</u>	<u>Centre's Per Cent of Two-County Urban Growth 1961-1968</u>
Kitchener-Waterloo	36.8	53.8
Guelph	36.7	21.8
Galt-Preston-Hespeler	27.9	18.5
Elmira	31.9	1.6
Fergus	27.5	1.6
Bridgeport	31.9	0.8
New Hamburg	19.9	0.6
Erin	23.3	0.4
Mount Forest	8.9	0.4
Elora	12.8	0.3
Ayr	13.1	0.2
Palmerston	9.3	0.2
Arthur	1.2	-
Harriston	2.5	-
Ontario	14.1	n.a.

Note: Dashes refer to percentage shares of less than 0.2 per cent.
n.a. - not applicable.

Source: Department of Municipal Affairs, Community Planning Branch,
Ontario Population Statistics, 1968.

TABLE 7.2

GROWTH RATES OF URBAN CENTRES, AND SHARES OF TOTAL
URBAN GROWTH, HURON AND PERTH COUNTIES, 1961 - 1968

<u>Centre</u>	<u>Per Cent Growth of Each Urban Centre 1961-1968</u>	<u>Centre's Per Cent of Two-County Urban Growth 1961-1968</u>
Stratford	13.7	63.0
Listowel	14.5	12.8
Goderich	4.7	6.7
St. Marys	5.4	5.5
Exeter	5.2	3.5
Mitchell	6.5	3.3
Wingham	3.3	2.1
Clinton	2.8	2.0
Milverton	2.5	0.6
Seaforth	0.5	0.3
Ontario	14.1	n.a.

Note: n.a. - not applicable.

Source: Department of Municipal Affairs, Community Planning Branch,
Ontario Population Statistics, 1968.

by their location along the Highway 7 growth corridor midway between Kitchener-Waterloo and Stratford.

Huron and Perth counties are classified as intermediate performance areas with about average provincial growth. The growth rates of the urban centres under consideration and their share of urban growth in these two counties are found on Table 7.2.

Two centres, Stratford and Listowel, stand out in terms of growth rates. Both have populations growing at about the same rate as the provincial norm. Together, they accounted for 75.8 per cent of the total two-county increase in urban population between 1961 and 1968.

The rest of the centres are growing at rates below the provincial average. Goderich contributed 6.7 per cent of the two-county urban population increase from 1961 to 1968, while Mitchell and St. Marys together accounted for another nine per cent of the increase. The latter two centres' location within commuting range of Stratford may partially have accounted for their growth. The remaining urban places are rural service centres which are virtually static in population.

2. Spheres of Influence

The Journey-to-Work Pattern Of the various criteria which can be used to describe the sphere of influence of a centre, the

daily journey-to-work pattern is one of the most effective since few other social and economic relationships have as strong an effect on community growth patterns. The journey-to-work pattern shows the daily influence exerted by a centre of employment upon the surrounding area.

It has been estimated from several studies that work trips usually account for between 40 and 50 per cent of all daily trips by mechanical means.¹ Their impact on the shape and size of the transportation network is even greater because the journey-to-work trip is highly concentrated at peak hours and so determines transportation facility capacities.

Though journey-to-work trips as a proportion of all trips may tend to decline as increasing affluence and leisure stimulate more social and recreational trips, the region-shaping nature of the journey-to-work is likely to prevail over the next half-century. Indeed, data collected in Eastern Ontario and Quebec² suggest that the journey-to-work hinterlands, derived from manufacturing data, can be considered to have much wider implications, in that the outer limits of manufacturing journey-to-work patterns tend to coincide with the outer limits of all journey-to-work patterns.

¹e.g. see M.T.A.R.T.S., Growth and Travel, Past and Present, 1966, pp. 52-53; and Pushkarev, B.S. "The Atlantic Urban Seaboard: Development Issues and Strategies", Regional Plan News, No. 90, September 1969, pp. 13 ff.

²R.S. Thoman and M.H. Yeates, Delimitation of Development Regions in Canada (With Special Attention to the Georgian Bay Vicinity), A Report submitted to A.D.A., Department of Industry, Ottawa 1966, Footnote 4. p. 40.

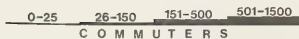
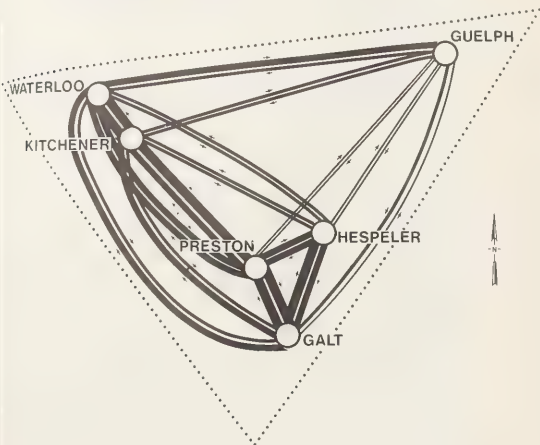
Sample data for the journey-to-work study for the Mid-western Ontario Region involved a complete enumeration of the location of employees (aggregated to centres) for at least the two largest manufacturing firms in each centre. The sample percentage varied according to the dominance of the largest manufacturing companies in the centres.¹ To achieve an element of comparability between centres, the survey samples were expanded to 100 per cent.

Trip data were mapped (Figure 28) to show the limits of journey-to-work zones and levels of commuting between the central city and other urban and rural places. Boundaries were approximated to the nearest township to facilitate computation. For a few of the smaller centres in the study area (especially Clinton, Elora, Ayr, Milverton and Palmerston), approximations of the journey-to-work zones were made using 10 or 15 mile distance bands, depending on the functional classification of the centre (see discussion below on the functional hierarchy of centres).

The journey-to-work map is a convenient way of visualizing the patterns of movement and the distribution of employment in the Region. The total pattern of urban centres and their journey-to-work zones comprises a geographical mosaic which ideally should offer employment opportunities to essentially all urban and rural people in the Region.

¹For a similar design, see R.S. Thoman and M.H. Yeates, op.cit., pp. 104 ff.

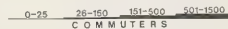
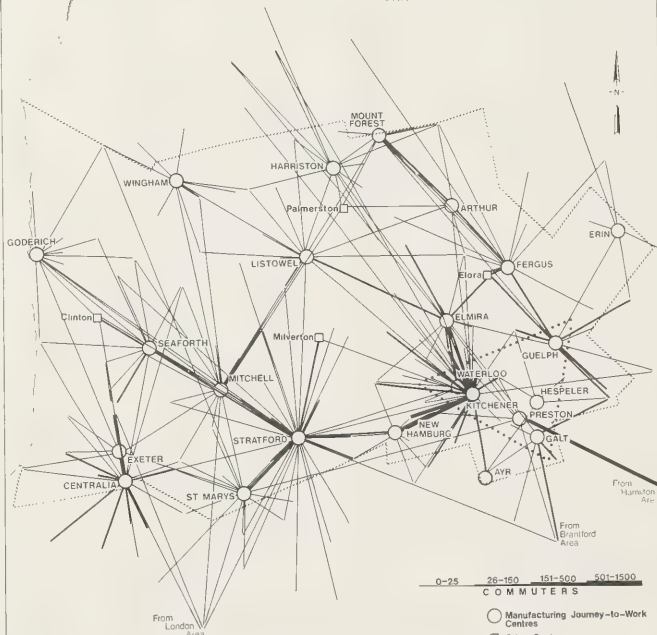
"GOLDEN TRIANGLE" INTER-URBAN JOURNEY-TO-WORK



scale 2 1 0 2 4 miles

REGIONAL DEVELOPMENT BRANCH,
DEPARTMENT OF TREASURY AND ECONOMICS

MIDWESTERN ONTARIO DEVELOPMENT REGION JOURNEY-TO-WORK



- Manufacturing Journey-to-Work Centres
- Other Centres

----- Regional Boundary

scale 5 0 5 10 15 20 miles

REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS

Figure 28

Table 7.3 presents the urban and rural population of each centre's trade area. It is estimated that over 84 per cent of the Region's population lives within the sphere of influence of five urban complexes: Kitchener-Waterloo, Guelph, Galt-Preston-Hespeler, Stratford and Goderich. The centres themselves account for over 60 per cent of the total population of the Region.

As can be seen on the accompanying journey-to-work map, the greatest exchange of workers is within the "Golden Triangle", particularly between Kitchener-Waterloo and Galt-Preston. Although journey-to-work trips do occur between Guelph and other cities within the "Golden Triangle", these trips are much less frequent than between Waterloo and Galt.

Of interest is the number of workers that come into the Midwestern Region from other areas. The number of people attracted to the Kitchener-Waterloo and the Galt-Preston-Hespeler complexes from the Hamilton-St. Catharines area is particularly pronounced. Similarly, the number of people from the London area that work in Southern Huron and Perth counties reveals the inter-relationship of this part of the Midwestern Region with London.

Except for the four largest urban complexes (Kitchener-Waterloo, Guelph, Galt-Preston-Hespeler and Stratford), the percentage of each trade area's population which is rural is larger than that which resides in the central city. This suggests that the economic

TABLE 7.3

COMPOSITION OF TRADE AREAS: SIZE, RURAL AND URBAN POPULATION, 1966

Urban Centre	Trade Area Population 1966	Population Of Central City 1966	Urban Population Of Trade Area (Incorporated Places Excluding Central City) 1966	Rural Population Of Trade Area 1966	Trade Area Size (Sq. Miles)
Kitchener-Waterloo	220,568 (100.0)	123,144 (55.8)	76,200 (34.6)	21,224 (9.6)	402
Guelph	98,772 (100.0)	51,377 (52.0)	26,992 (27.3)	20,503 (20.7)	486
Galt-Preston-Hespeler	85,048 (100.0)	52,252 (61.4)	1,134 (1.3)	31,662 (37.2)	521
Stratford	54,675 (100.0)	23,068 (42.2)	9,682 (17.7)	21,925 (40.1)	650
Elmira	23,992 (100.0)	4,047 (16.9)	2,321 (9.7)	17,554 (73.4)	404
Fergus	20,966 (100.0)	4,376 (20.9)	4,070 (19.4)	12,520 (59.7)	331
Coderich	20,628 (100.0)	6,701 (32.5)	4,552 (22.1)	9,375 (45.4)	457
New Hamburg	16,387 (100.0)	2,438 (15.0)	1,908 (11.6)	12,041 (73.4)	242
Listowel	13,882 (100.0)	4,526 (32.6)	-	9,356 (67.4)	470
St. Marys	12,149 (100.0)	4,750 (39.1)	-	7,399 (60.9)	276
Clinton	9,481 (100.0)	3,280 (34.6)	1,263 (13.3)	4,938 (52.1)	175
Seaforth	9,315 (100.0)	2,241 (24.1)	934 (10.0)	6,140 (65.9)	172
Exeter	9,274 (100.0)	3,226 (34.8)	1,671 (18.0)	4,897 (47.2)	216
Wingham	8,707 (100.0)	2,974 (34.2)	820 (9.4)	4,913 (56.4)	262
Mount Forest	8,601 (100.0)	2,859 (33.2)	1,631 (19.0)	4,111 (47.8)	241
Mitchell	8,228 (100.0)	2,371 (28.8)	-	5,857 (71.2)	233
Milverton	7,426 (100.0)	1,122 (15.1)	-	6,304 (84.9)	179
Palmerston	7,164 (100.0)	1,631 (22.8)	677 (9.5)	4,856 (67.7)	176
Elora	6,599 (100.0)	1,644 (24.9)	-	5,155 (75.1)	175
Harriston	6,169 (100.0)	1,748 (28.3)	1,631 (26.4)	2,790 (45.3)	155
Arthur	5,769 (100.0)	1,242 (21.5)	-	4,527 (78.5)	213
Ayr	5,665 (100.0)	1,134 (20.0)	-	4,531 (80.0)	70
Erin	5,268 (100.0)	1,195 (22.7)	-	4,073 (77.3)	204

- Nil

Source: Calculated from field data and census tabulations, Regional Development Branch.

role of these smaller centres is, in large part, that of providing services for their surrounding trade areas. In fact, Listowel, St. Marys, Mitchell, Milverton, Elora, Arthur, Ayr and Erin have no urban population in their trading territory except for the populations of the centres themselves. In all centres with populations of over 10,000, at least some 40 - 60 per cent of their total trade area population is in the central city.

No significant patterning seems to emerge concerning the percentage of urban population living in the trade area (excluding the central city). Variations seem to occur depending on the location of the transportation network and upon whether the journey-to-work zone encompasses rural areas or not. A similar conclusion can be drawn about trade area sizes, except that there seems to be a closer relationship between rural location and size.

An effort was made to determine from the sample the degree of commuting to the urban centre of each journey-to-work zone. There seems to be no constant commuting/residence relationship, but on the average, the intensity of commuting to a centre falls off sharply with increasing distance. In general, more than 70 per cent of the people working in a central city reside in that same city (See Table 7.4). However, variations do occur among the urban centres. There is no significant relationship between the relative degree of commuting and city size, though the larger the urban centre, the greater is the absolute amount of commuting.

TABLE 7.4

PROPORTION OF MANUFACTURING EMPLOYEES WHO
COMMUTE OR RESIDE IN EACH CENTRE

<u>Centre</u>	<u>% Commuters</u>	<u>% Workers residing in central city</u>
Kitchener-Waterloo	21.0	79.0
Galt-Preston-Hespeler	39.1	60.9
Guelph	10.0	90.0
Fergus	33.7	66.3
Erin	53.7	56.3
Elmira	36.7	63.3
New Hamburg	20.0	80.0
Arthur	37.0	63.0
Mount Forest	18.0	72.0
Harriston	21.9	78.1
Listowel	14.0	86.0
Stratford	38.7	61.3
St. Marys	11.6	88.4
Mitchell	36.2	63.8
Wingham	26.0	74.0
Goderich	21.0	79.0
Seaforth	28.5	71.5
Exeter	21.7	78.3
Clinton	n.a.	-
Milverton	n.a.	-
Elora	n.a.	-
Palmerston	n.a.	-
Ayr	n.a.	-

Notes: n.a. - data not available

Source: Compilation from field work data and tabulations.
Regional Development Branch.

It can be noted that the variations which occur in the degree of commutation to different sizes of centres is related to the functional type of centre, its location and degree of dependence on the rural component of the trade area population, the level of urbanization and extensiveness of transportation network which serves the central city.

Work trips vary in length according to the size of the employment centres, job locations within them and the residential scatter of workers. Generally, the length of work trips declines with smaller centres e.g. the average work trip for the Kitchener-Waterloo complex was about 15 miles, Goderich 10 miles, and St. Marys 9.9 miles. A variant to this pattern would be in rural areas where trip distances would be related to the land survey pattern and accessibility of a given centre. Exeter, for instance, has an average trip length of 11 miles. In more urbanized zones like the Grand River triangle of centres, trip length varies with the functional type of centre plus their relative locations on the transportation network.

Functional Hierarchy of Centres Urban centres can be arranged into a hierarchical array which reflects the varying capacities of centres to supply goods and services. In the Province of Ontario, six functional types of centres have been used within the classification system (See footnotes relating to the summary of this chapter as well as Appendix E). These types were selected using a list of typical functions¹ - business and other services -

¹A function is defined as a kind of activity, such as barbering or food service. On the other hand, the number of establishments may include ten barber shops and sixteen food service stores.

which draw people from the surrounding territory into the centre. The general criteria for rating centres included the kind and number of commercial and industrial facilities, transportation and communications facilities, cultural and recreational facilities and service facilities. In addition, the relative location of the centre, the pattern of trip frequencies and the distances travelled were considered to be significant in the final classification.

At least four levels in the functional hierarchy can be recognized in the Midwestern Region. These are:

Regional Centres (Type 3) with population ranges of 42,000 to 300,000. Centres which fall into this level are Kitchener-Waterloo and Guelph.

Sub-Regional Centres (Type 4) with population ranges of 7,800 to 50,000. Centres which fall into this category are Galt-Preston-Hespeler, Goderich, Listowel and Stratford.

Full Convenience Centres (Type 5) with population ranges from 800 to 9,000, include Clinton, Elmira, Exeter, Fergus, Harriston, Mount Forest, St. Marys, Seaforth and Wingham.

Minimum Convenience Centres (Type 6) ranging in population from 220 to 1,500 people, include Arthur, Ayr, Elora, Erin, Milverton, Mitchell, New Hamburg and Palmerston.

On the average, the minimum convenience centres may offer up to 35 functions and have approximately 70 service establishments. The full convenience centres may provide up to 88 functions and

have over 140 establishments. Sub-regional centres may offer over 130 business and other types of services and have as many as 800 firms. Regional centres have at least 170 functional types and generally contain over 2,100 firms.

The table below (Table 7.5) portrays the growth relationships of different functional types of centres in the Midwestern Region. Between 1961 and 1968, there was almost 22 per cent increase in the urban population of the Region. Significant variations occurred, however, among the functional classes. The regional centres (Type 3) grew the fastest (27 per cent over this time period) altering their share of total regional population from 37.1 per cent in 1961 to over 42 per cent in 1968. Sub-regional centres also grew rapidly (17.5 per cent during 1961-1968) changing their regional share of total population from 20.4 per cent in 1961 to 20.6 per cent in 1968. The regional and sub-regional levels of urban centres accounted for over 92 per cent of the total increment of urban population growth in the Midwestern Region over this period of time.

The full convenience class of centres grew by 9.5 per cent from 1961 to 1968 - which is much slower than the Type 3 and Type 4 centres. The share of regional population in this level of the urban hierarchy declined from 7.5 per cent in 1961 to 7.0 per cent in 1966 down to 6.9 per cent in 1968. Full convenience centres absorbed only 4.0 per cent of the total increment of urban population during this time period. The minimum convenience level also declined in its

TABLE 7.5

FUNCTIONAL TYPES OF CENTRES IN MIDWESTERN ONTARIO REGION:
REGIONAL SHARES OF POPULATION, ABSOLUTE GROWTH OF URBAN POPULATION
AND GROWTH RATES, 1961 - 1968

Functional Types	Description	% of Regional Population in 1961	% of Regional Population in 1966	% of Regional Population in 1968 ¹	% of Regional Urban Population Increase 1961 - 1968	Growth Rates of Functional types: % change 1961 - 1968
3	Regional Centres	37.1	41.2	42.3	69.9	27.0
4	Sub-regional Centres	20.4	20.6	20.6	22.2	17.5
5	Full Convenience Centres	7.5	7.0	6.9	4.0	9.5
6	Minimum Convenience Centres	3.5	3.3	3.2	1.9	9.6
	Other Urban Centres	1.6	3.8	1.7	2.0	19.0
	<u>Total Urban System</u>	70.0	73.7	74.7	100.0	21.8

¹Data for 1968 refer to assessed population

Source: Dominion Bureau of Statistics, Census of Population, 1961 and 1966:

Department of Municipal Affairs, Ontario Population Statistics, Community Planning Branch, 1969

MIDWESTERN ONTARIO DEVELOPMENT REGION RATE OF POPULATION INCREASE AND FUNCTIONAL HIERARCHY OF CENTRES

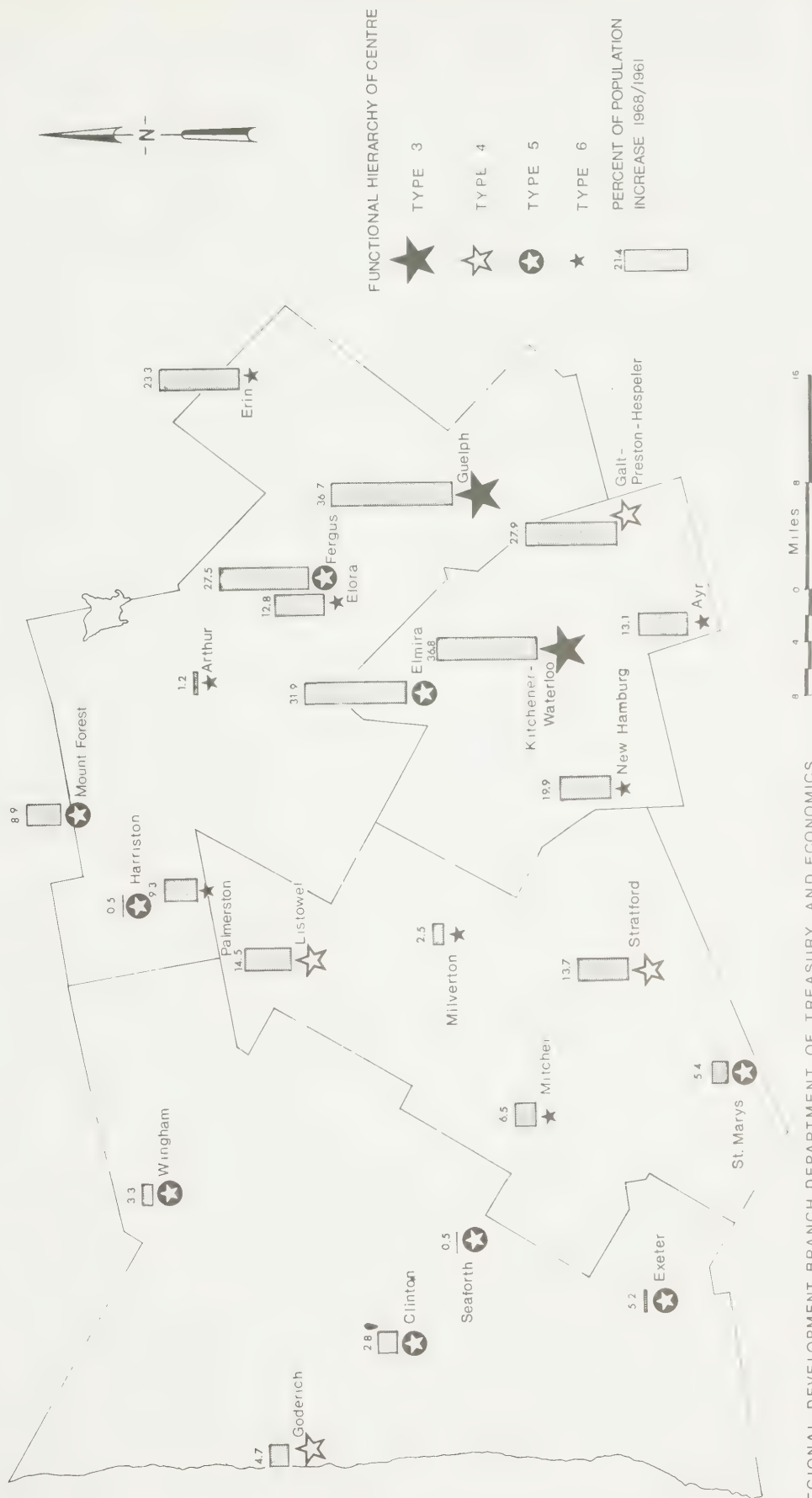


Figure 29

regional share of population (from 3.5 per cent in 1961 to 3.2 per cent in 1968). This class of centres had the smallest percentage of regional urban population increase between 1961 and 1968 (1.9 per cent).

In sum, the convenience level centres in the urban hierarchy have had a declining share of regional population, have absorbed less than six per cent of the total urban growth in the Region, and have grown at rates lower than the average growth rate of urban centres in the Region during the period 1961 to 1968.

The last group of centres listed in Table 7.5 is mainly comprised of places below 1,000 population which may or may not be incorporated centres and which were not classified functionally. These showed fluctuation in their share of total regional population from 1.6 per cent in 1961 to 3.8 per cent in 1966. Since 1966 these other urban centres have been steadily declining in terms of their share of regional population even though between 1961 and 1968 they absorbed 2.0 per cent of the total urban growth taking place in the Midwestern Region. Significantly, these centres are growing at a faster rate than Types 4, 5, and 6 centres but slower than the growth rate of urban centres as a whole. One reason behind this might be the fact that these centres are situated near the larger urban complexes and perform residuary or dormitory functions.

Table 7.6 shows the number of functions and establishments by urban centre in 1968 for service, retail and wholesale trades. The number of functions and/or establishments is highly correlated with urban population size. Kitchener and Guelph dominate all other centres in these component measures of the functional hierarchy. There are, however, some significant deviations between population and number of functions. For example, Hespeler ranks lower in the functional hierarchy than its population size would indicate because of its proximity to both Galt-Preston and to the Kitchener-Waterloo complex. On the other hand, the centres of Listowel and Mount Forest rank higher on the functional scale than would be anticipated by their population size alone. This results from the size of each centre's trade area, as well as their relative remoteness from a major urban centre.

Provision of Government Services (Federal and Provincial). Many government services are represented in the Midwestern Region. Waterloo County contains the greatest number and variety of services, followed by Wellington, Perth and Huron.

TABLE 7.6

NUMBER OF FUNCTIONS AND ESTABLISHMENTS BY MAJOR URBAN CENTRES - 1968

Urban Centres	Population 1966	No. Of		No. Of		No. Of Wholesale Establishments
		Service Functions	Service Locations	Retail Functions	Retail Locations	
Kitchener	93,255	75	1,200	63	884	136
Guelph	51,377	74	811	69	528	57
Galt	33,491	66	392	62	376	41
Waterloo	29,889	57	342	63	302	40
Stratford	23,068	60	349	60	256	34
Preston	13,380	44	143	42	119	20
Coderich	6,701	39	124	43	119	11
Hespeler	5,381	30	54	34	54	4
St. Marys	4,750	40	96	37	80	9
Listowel	4,526	39	110	44	123	8
Fergus	4,376	35	87	37	72	4
Elmira	4,047	35	74	34	75	5
Clinton	3,280	37	76	36	89	7
Exeter	3,226	31	64	36	74	10
Wingham	2,974	30	60	34	74	6
Mount Forest	2,859	35	71	40	94	10
New Hamburg	2,438	20	35	22	38	-
Mitchell	2,371	29	43	21	36	3
Seaforth	2,241	26	59	30	60	4
Harriston	1,748	25	48	36	59	6
Elora	1,644	23	45	19	31	1
Palmerston	1,631	18	31	23	30	3
Arthur	1,242	21	37	26	56	4
Ayr	1,134	23	33	18	23	1
Milverton	1,122	16	33	24	48	3

- Nil

Source: Telephone Directories, 1968 and Dun and Bradstreet Reference Book, March, 1968.

The government services were weighted¹ by (1) intensity, i.e. the number of people served and (2) the size of the geographic area served. A score was totalled for each centre and an index was developed, rating² the provision of these services. Final ratings for each urban centre are reported in Table 7.7 and mapped in Figure 30.

Kitchener-Waterloo had the highest total score (177) and a rating of 1. This centre provides provincial regional services of the Departments of Health, Education, Labour, Tourism and Information, Social and Family Services; and federal regional services of the Departments of Health and Welfare, Revenue, Secretary of State, and Central Mortgage and Housing Corporation. This centre

¹Weighting was done on a scale of 1 to 5 for each Federal and Provincial service which was provided. Data for this measure were provided by the Provincial and Federal Departments of Public Works and from the Provincial Department of Justice (Real Property Inventory, 1969.)

Intensity Weight

1. light
2. moderately light
3. moderate
4. moderately heavy
5. heavy

Spatial Weight

1. immediate urban area
2. immediate urban area plus adjacent townships (typically the journey-to-work zone)
3. county or district area
4. economic region
5. Province

²See measure 6 of footnote to Summary Table entitled Preliminary Analysis of Selected Measures of Urban Growth Potential, Midwestern Ontario Region, p. 340

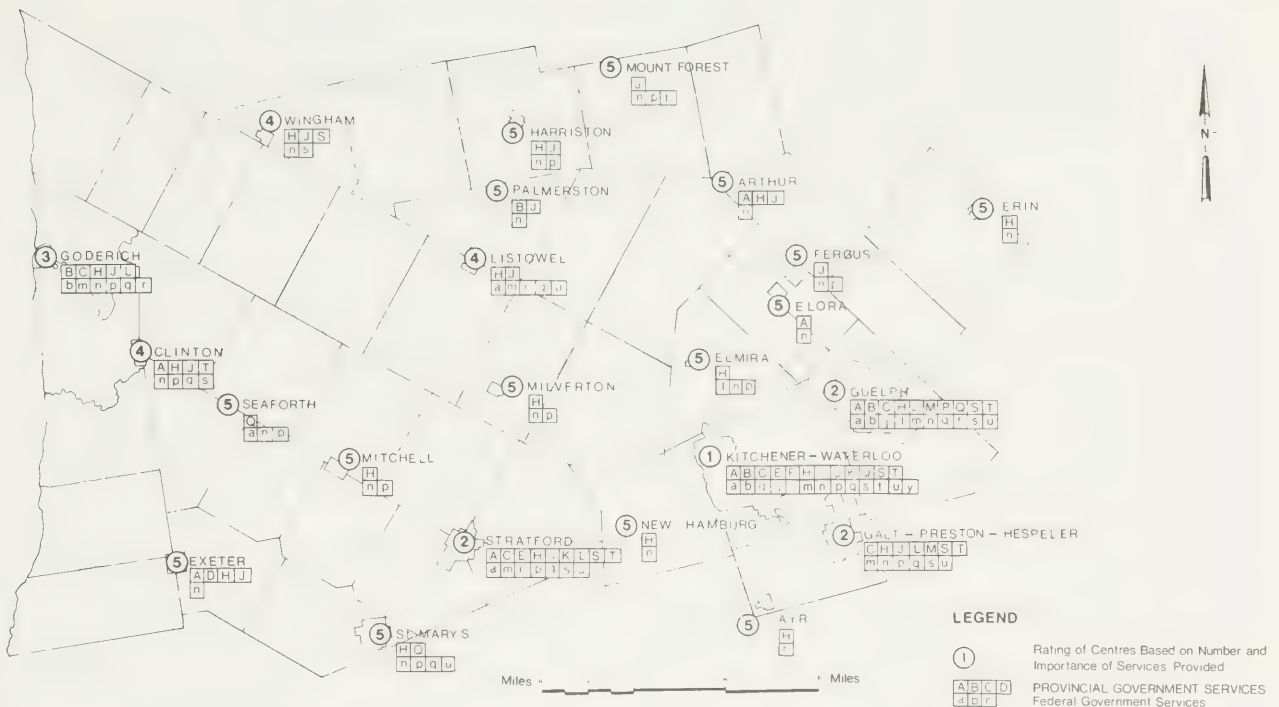
Table 7.7

PROVINCIAL AND FEDERAL GOVERNMENT SERVICES, RATINGS
BY URBAN CENTRES, 1969 - MIDWESTERN REGION

Centre	WEIGHTS					
	Federal		Provincial		Total	Rating
	Spatial	Intensity	Spatial	Intensity		
Arthur	1	5	8	13	27	5
Ayr	1	5	1	4	11	5
Clinton	8	10	10	13	41	4
Elmira	4	8	2	4	18	5
Elora	1	5	2	2	10	5
Erin	1	5	1	4	11	5
Exeter	1	5	5	10	21	5
Fergus	2	6	5	5	18	5
Galt-Preston- Hespeler	16	19	30	29	94	2
Goderich	11	16	26	26	79	3
Guelph	32	28	43	41	144	2
Harriston	2	6	3	6	17	5
Kitchener-Waterloo	45	40	44	48	177	1
Listowel	11	17	10	15	53	3
Milverton	2	6	1	4	13	5
Mitchell	2	6	1	4	13	5
Mount Forest	5	8	7	6	26	5
New Hamburg	1	5	1	4	11	5
Palmerston	1	5	6	4	16	5
St. Marys	6	11	3	5	25	5
Seaforth	5	9	3	1	18	5
Stratford	14	20	39	39	112	2
Wingham	4	7	11	13	35	4

Source: Special Tabulations, Provincial and Federal Departments of Public Works and the Provincial Department of Justice, Central Real Property Inventory, 1969, and Telephone Directories.

MIDWESTERN ONTARIO DEVELOPMENT REGION LOCATION OF GOVERNMENT SERVICES



Source Provincial and Federal Departments of Public Works,
Provincial Department of Justice, and
Telephone Directories, 1969

REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS

also provides "county area" level services of the Provincial Departments of Agriculture and Food, Trade and Development (OHC), Revenue, Commercial Affairs, Transport, Justice and the Ontario Hospital Services Commission; and the Federal Departments of Agriculture, Defense, Manpower and Immigration, and Justice (RCMP).

Guelph had a total score of 144 and consequently was rated type 2. It has the Guelph Reformatory (Provincial Department of Correctional Services), the Ontario Agricultural College (containing both Federal and Provincial research and laboratory facilities), and regional level services of the Federal Departments of Justice (National Parole Service), and Health and Welfare. Guelph also has "county area" level services of the Provincial Departments of Social and Family Services, Municipal Affairs, Transport (Driver Examination Centre), Revenue and Justice; and the Federal Departments of Manpower and Immigration, Energy, Mining and Resources, and the Unemployment Insurance Commission.

Galt-Preston-Hespeler had a total score of 94, rating it as a type 2 centre. This centre has the Grandview Girls School (Department of Correctional Services) and the provincial district office of the Department of Lands and Forests. This centre also has "county area" level services of the Provincial Departments of Social and Family Services, Transport, Public Works, and Municipal Affairs; and the Federal Department of Manpower and Immigration and the Unemployment Insurance Commission.

Stratford is a type 2 centre with a total score of 112. It has the Stratford Teachers College and the Provincial District office of the Department of Highways. This centre also has "county area" level services of the Provincial Departments of Justice, Agriculture and Food, Transport, Lands and Forests, Social and Family Services; and the Federal Departments of Agriculture, Manpower and Immigration and the Unemployment Insurance Commission.

Goderich, with a total score of 79, is a type 3 centre. It has a psychiatric hospital (Health), the County Court (Justice), a Savings Office (Revenue) and a Manpower Office (Federal-Manpower and Immigration).

Listowel was also classified as a type 3 centre. With a total score of 53, this centre has "county area" level services of the Federal Departments of Agriculture, Manpower and Immigration and the Unemployment Insurance Commission.

Clinton and Wingham were classified as type 4 centres. The former, with a total score of 41, has a general office of the Provincial Department of Agriculture and Food, a provincial court (Justice), and a driver examination centre (Transport). Clinton is also the location of an Air Force Base to be deactivated in 1971. Wingham, with a total score of 35, has a regional office of the Department of Social and Family Services and an OPP Detachment (Justice).

The remaining centres of the Region with populations over 500 are type 5 (scores of 1-30). The two most prevalent government services in these centres are Federal Post Offices and Provincial Highway Patrol Yards. Other services which are found include:

- (1) Provincial - OPP Detachments (Justice)
Courts and Probation (Justice)
Driver Examination Centres (Transport)
Agricultural Representatives
- (2) Federal - Customs and Excise (Revenue)
Agricultural Representatives
Public Work Offices

3. Inter-Industry Mix

(a) Sectoral Aspects

Economic activities in urban centres of the Midwestern Region were classified into three broad categories: (1) trade, services and finance (2) resource development and manufacturing and (3) other special activities (including transportation, communications, public services, defence). The relative ratios of these categories for each urban centre indicate the extent and direction of its economic specialization. Table 7.8 describes the degrees of participation by the labour force¹ of each centre in each of the three categories outlined above.

¹The data for this table are based upon 1961 labour force data from the Census of Canada. It is important to note that these data are enumerated by place of residence, not by place of work and therefore, ignore the inter-urban commuting flows described elsewhere.

Table 7.8

Sectoral Mix by Urban Centre, Midwestern Ontario Region, 1961

Urban Centre	Labour Force ^a 1961	% of Labour Force in Resource Industries & Mfg. Sector	% of Labour Force in Trades, Services, Finance Sector	% of Labour Force in "Other Special Activities" Sector
Kitchener-Waterloo	41,126	44.6	39.8	15.6
Galt-Hespeler-Preston	18,207	58.0	54.6	21.9
Guelph	16,230	41.0	42.0	17.0
Stratford	8,154	37.3	40.6	22.1
Goderich	2,255	30.1	42.0	27.9
St. Marys	1,564	44.3	39.9	15.8
Listowel	1,525	38.6	40.5	20.9
Fergus	1,449	51.6	36.3	12.1
Elmira	1,308	49.9	38.4	11.7
Clinton	1,273	17.1	37.5	45.4
Wingham	1,151	28.5	49.7	21.8
Exeter	1,086	18.4	49.2	32.4
New Hamburg	931	50.7	36.9	12.4
Mount Forest	925	32.6	46.2	21.2
Mitchell	809	30.0	46.0	24.0
Seaforth	777	36.3	42.3	21.4
Harriston	611	34.7	45.2	20.1
Palmerston	564	26.4	46.3	27.3
Elora	524	43.9	38.0	18.1
Milverton	434	42.4	43.8	13.8
Arthur	422	23.5	53.0	23.5

^aThe 1961 Census labour force includes all persons 15 years of age and over, who had a job of any kind, either part-time or full-time (even if they were not at work), or were reported as looking for work. The labour force excludes all inmates of institutions.

Source: Tables compiled and ratios calculated from data supplied by Canada, Department of Manpower and Immigration.

On the whole, there is little variation among centres in the degree of participation in the purely tertiary activities (defined here as trade, services and finance). The highest proportions are found mostly in the convenience centres of Wingham, Mitchell, Palmerston, Arthur, Exeter, Milverton, Harriston, Mount Forest and Seaforth.

For the resource industries and manufacturing sector,¹ Galt-Preston-Hespeler, New Hamburg, Elmira and Fergus stand out as relatively specialized. Places with lower than average participation rates in this sector are the convenience centres mentioned above.

Four centres are dominant in the "other special activities" category. Both Clinton and Exeter were characterized by military bases in 1961 - the Exeter base (Centralia) has been closed down and the Clinton base will be phased out by September, 1971. Stratford is also important in this category, mainly because it provided a specialized transportation function - one which, however, has altered significantly since 1961. Finally, Goderich shows some tendency towards specialization in this category, primarily as a key recreational centre.

¹For the Midwestern Region, we are, in reality, mainly involved with manufacturing since the share of the labour force engaged in the primary activities is negligible. For instance, selected statistics on the large centres show only Goderich having a significant proportion of its labour force in the primary sector (7.5%) and this is lower than the share of the Region (15%) and the Province (10%). In addition, this figure is upgraded in the sense that it includes agricultural labour force residing in urban centres plus minimal amounts engaged in fishing, forestry and trapping.

The sectoral economic structure of the centres not discussed above, Kitchener-Waterloo, Listowel, Guelph and St. Marys, are relatively homogenous.

(b) Industry Mix

It has been shown that manufacturing presents the highest degree of variability, by urban centres in the Region. Table 7.9 shows the structural mix of industries for each centre under consideration. The urban centres are ranked from the highest to the lowest in terms of the size of employment in 1968.

Some SIC classifications seem to occur in most urban centres. For example, the food and beverage group occurs in 86 per cent of the centres, the wood industries in 68 per cent, the metal fabricating industries in 64 per cent, and the miscellaneous, and furniture and fixture industries in 59 per cent. Except for the food and beverage and metal fabricating categories, there seems to be no distinct structural association of industry types with total employment (and hence urban size).

The tobacco industry is found only in Guelph. The rubber, knitting, clothing and paper industries seem to locate only in the largest and highest functional urban units.

The most diversified mix of industries occurs in the four

TABLE 7.9

INDUSTRY MIX, SELECTED URBAN CENTRES, MIDWESTERN ONTARIO REGION, 1968

Urban Centre	Total Manufacturing Employment (1)	% Of Regional Manufacturing Employment (2)	Food And Beverage Industries (3)	Tobacco Products Industries (4)	Rubber Industries (5)	Leather Industries (6)	Textile Industries (7)	Knitting Mills (8)	Clothing Industries (9)	Wood Industries (10)	Furniture And Fixture Industries (11)
Kitchener-Waterloo	29,677	41.6	4,891 (16.5)	-	4,151 (14.0)	1,564 (5.3)	1,578 (5.3)	697 (2.4)	1,994 (6.7)	597 (2.0)	2,223 (7.5)
Galt-Preston-Hespeler	15,855	22.3	336 (2.1)	-	361 (2.2)	1,657 (10.5)	2,467 (15.6)	521 (3.3)	250 (1.6)	130 (0.8)	51 (0.3)
Guelph	10,437	14.6	377 (3.6)	658 (6.2)	164 (1.6)	50 (0.5)	580 (5.5)	156 (1.5)	632 (6.0)	82 (0.8)	90 (0.9)
Stratford	5,458	7.7	127 (2.3)	-	725 (13.3)	67 (1.2)	348 (6.4)	112 (2.1)	66 (1.2)	11 (0.2)	531 (9.7)
Fergus	1,414	2.0	95 (6.7)	-	-	155 (11.0)	4 (0.3)	-	-	31 (2.2)	9 (0.6)
Listowel	1,126	1.6	670 (59.5)	-	-	-	200 (17.8)	-	-	16 (1.4)	218 (19.4)
Elmira	1,067	1.5	175 (16.4)	-	34 (3.2)	-	116 (10.9)	128 (1.2)	55 (5.2)	1 (0.1)	80 (7.5)
St. Marys	740	1.0	59 (8.0)	-	-	-	-	-	-	-	-
Goderich	670	0.9	-	-	-	-	-	-	-	109 (16.3)	-
New Hamburg	483	0.7	10 (2.1)	-	-	20 (4.1)	26 (5.4)	-	-	-	62 (12.8)
Wingham	454	0.6	-	-	-	25 (5.5)	-	-	-	200 (44.1)	25 (5.5)
Seaforth	355	0.5	28 (7.7)	-	-	180 (48.1)	-	-	-	5 (1.3)	49 (13.1)
Mount Forest	262	0.4	29 (11.1)	-	-	-	-	-	-	112 (42.8)	-
Hensall	202	0.3	38 (18.8)	-	4 (2.0)	-	-	-	-	-	-
Harriston	187	0.3	128 (68.4)	-	-	-	-	-	-	24 (12.8)	-
Exeter	185	0.3	86 (46.5)	-	-	-	-	-	-	-	13 (7.0)
Elora	148	0.2	-	-	-	-	-	-	-	-	148 (100.0)
Clinton	147	0.2	23 (15.6)	-	-	-	-	-	-	-	23 (15.7)
Mitchell	139	0.2	72 (51.8)	-	-	-	-	32 (21.8)	-	35 (25.2)	-
Ayr	90	0.1	7 (7.8)	-	-	-	-	-	-	-	7 (7.8)
Palmerston	51	0.1	39 (76.5)	-	-	-	-	-	-	3 (5.9)	-
Erin	41	0.1	-	-	-	-	15 (36.6)	-	-	15 (36.6)	-
Arthur	36	0.1	33 (91.7)	-	-	-	-	-	-	-	-
Total Employment	69,234	97.5	7,223	658	5,439	3,718	5,334	1,646	2,997	1,371	4,103
% Of Regional Employment			97.9	100.0	91.3	99.3	99.1	100.0	90.9	92.4	96.9

TABLE 7.9 (Cont'd)

INDUSTRY MIX, SELECTED URBAN CENTRES, MIDWESTERN ONTARIO REGION, 1968 (Cont'd.)

Urban Centre	Paper And Allied Industries (12)	Printing And Allied Industries (13)	Primary Metal Industries (14)	Metal Fabricating Industries (15)	Machinery Industries (16)	Transportation Equipment Industries (17)	Electrical Products Industries (18)	Non-Metallic Mineral Products Industries (19)	Petroleum And Coal Products Industries (20)	Chemical And Chemical Products Industries (21)	Miscellaneous Manufacturing Industries (22)
Kitchener-Waterloo	309 (1.0)	212 (0.7)	65 (0.2)	3,283 (11.1)	1,680 (5.7)	1,909 (6.4)	2,454 (8.3)	806 (2.7)	-	251 (0.8)	1,011 (3.4)
Galt-Preston-Hespeler	32 (0.2)	6 (*)	967 (6.1)	2,837 (17.9)	2,221 (14.0)	1,344 (8.5)	1,224 (7.7)	218 (1.4)	-	270 (1.7)	397 (2.5)
Guelph	285 (2.7)	10 (0.1)	658 (6.2)	2,105 (19.9)	749 (7.1)	334 (3.2)	2,459 (23.3)	408 (3.9)	15 (0.2)	152 (1.4)	467 (4.4)
Stratford	77 (1.4)	118 (2.2)	21 (0.4)	825 (15.1)	677 (12.4)	1,089 (20.0)	291 (5.3)	13 (0.2)	-	78 (1.4)	282 (5.2)
Fergus	-	157 (11.1)	45 (3.2)	67 (4.7)	300 (21.2)	165 (11.7)	383 (27.1)	-	-	3 (0.2)	-
Listowel	-	-	-	-	-	-	-	18 (1.6)	-	-	4 (0.4)
Elmira	-	-	55 (5.2)	23 (2.2)	59 (5.5)	17 (1.6)	17 (1.6)	-	34 (3.2)	267 (25.0)	6 (0.6)
St. Marys	243 (32.8)	-	-	102 (13.8)	62 (8.4)	60 (8.1)	-	196 (26.5)	-	-	18 (2.4)
Goderich	-	68 (10.2)	-	18 (2.7)	273 (40.8)	46 (6.9)	-	8 (1.2)	-	74 (11.0)	74 (11.0)
New Hamburg	-	-	148 (30.6)	198 (41.0)	-	7 (1.5)	-	-	-	-	12 (2.5)
Wingham	-	-	40 (8.8)	164 (36.1)	-	-	-	-	-	-	-
Seaforth	-	5 (1.3)	-	53 (14.2)	20 (5.4)	-	-	12 (3.2)	-	13 (3.6)	-
Mount Forest	-	-	-	-	-	-	90 (34.4)	-	-	-	31 (11.8)
Hensall	-	-	-	-	-	150 (74.2)	-	-	-	6 (3.0)	-
Harriston	-	-	-	5 (2.7)	-	-	-	-	-	30 (16.1)	-
Exeter	-	-	-	-	35 (18.9)	36 (19.5)	-	-	-	-	15 (8.1)
Elora	-	-	-	-	-	-	-	-	-	-	-
Clinton	-	4 (2.7)	-	4 (2.7)	8 (5.4)	-	-	-	-	30 (20.4)	23 (15.6)
Mitchell	-	-	-	-	-	-	-	32 (23.0)	-	-	-
Ayr	-	-	32 (35.6)	28 (31.1)	13 (14.4)	-	-	-	-	3 (3.3)	-
Palmerston	-	-	-	-	-	-	-	-	-	9 (17.7)	-
Erin	-	-	-	5 (12.7)	-	-	-	1 (2.4)	-	-	5 (12.2)
Arthur	-	3 (8.3)	-	-	-	-	-	-	-	-	-
Total Employment	946	583	2,031	9,717	6,097	5,157	6,918	1,716	49	1,186	2,345
Of Regional Employment	100.0	100.0	99.9	99.0	98.8	98.1	100.0	92.8	71.0	96.0	94.2

Note: (*) Less than 0.1 per cent.
Figures in brackets refer to the percentage share in each SIC group for each centre.

Source: MODA and Scotts Industrial Directories, 1968.

largest urban areas (Kitchener-Waterloo, Galt-Preston-Hespeler, Guelph and Stratford). Together these centres accounted for 86.4 per cent of the total regional manufacturing employment in 1968. Only two SIC groups (tobacco and chemical and allied industrial groups) are not represented in these centres. The only exception is Guelph where all industry groups occur.

Industries with relatively high regional growth (1964 to 1968) were tobacco, rubber, textiles, furniture and fixtures, paper and allied products, machinery, transportation equipment, non-metallic minerals and the miscellaneous groups. Of these, only rubber, textiles, paper and allied products, transportation equipment and machinery industries also experienced high provincial growth during this period. The primary metal, electrical products, petroleum and coal products and the chemical and chemical products industries have had relatively high growth in the Province, but not in the Region.

Kitchener-Waterloo has 66 per cent of its manufacturing employment in regional growth industries and at least 45 per cent in the provincial growth category. Yet the industries with the largest employment are the food and beverage (16.5 per cent of total employment), rubber (14.0 per cent), metal fabricating (11.1 per cent), and the electrical products group (8.3 per cent) which together account for 50 per cent of total manufacturing employment in the centre. Only two of these (the rubber and the electrical products groups) show any regional or provincial growth tendencies.

Galt-Preston-Hespeler is the next largest manufacturing employer in the Region. This urban complex has 48.3 per cent of its employment in regional and 56 per cent in provincial growth industries. The largest employers are the metal fabricating (17.9 per cent of total manufacturing employment in the centre), textiles (15.6 per cent), transportation equipment (8.5 per cent), and leather (10.5 per cent) industry groups, involving over 52 per cent of total manufacturing employment of the centre. Of these groups only the metal fabricating category demonstrates slow growth tendencies.

Guelph had only 35.5 per cent of its total 1968 manufacturing employment in regional growth industries, and 51.2 per cent in industries with high provincial growth characteristics. The industrial groups with the largest employment are electrical products (23.3 per cent), metal fabricating (19.9 per cent), machinery industries (7.1 per cent), tobacco and primary metals (both 6.2 per cent). Of these, only the electrical products group is a regional slow growth industry, but has experienced rapid growth in the Province.

Of all four urban complexes, Stratford had the most dynamic industrial mix in the sense that it had the largest proportions of employment in regional growth industries (68.6 per cent) and provincial growth industries (60.6 per cent). The largest concentrations of employment are found in the following fast growth industries - transportation equipment (20.0 per cent), machinery industries (12.4

per cent), the rubber group (13.3 per cent) and furniture and fixtures industries (9.7 per cent). Only one relatively slow growth industry, (metal fabricating) provided significant employment (15.1 per cent).

The rest of the centres under consideration together accounted for 10.8 per cent of the regional manufacturing employment. Of this Fergus had 2.0 per cent, Listowel 1.6 per cent, Elmira 1.5 per cent and St. Marys 1.0 per cent. Fourteen smaller centres together accounted for 4.7 per cent of the regional employment in manufacturing, none had more than one per cent of the total.

Of these centres, Elmira has the most diverse mix of industries with 15 out of 20 industrial groups represented. The chemical and allied group is most important accounting for 25.0 per cent of the centre's manufacturing employment, with food and beverages next in importance, comprising 16.4 per cent.

Fergus is also moderately diversified with 12 out of 20 SIC groups represented. The largest employment occurs in the electrical products industry (27.1 per cent), the machinery industries (21.2 per cent) and the printing, publishing and allied groups (11.1 per cent).

Listowel had a representation of only 6 SIC classes in 1968. In this centre the food and beverage industry accounted for almost 60 per cent of its employment in manufacturing, furniture and

fixtures for 19.4 per cent and textiles for 17.8 per cent. These three industries together accounted for 97 per cent of all manufacturing employment in 1968.

In St. Marys, three industrial groups - paper and allied, non-metallic minerals and metal fabricating - accounted for nearly three-quarters of all manufacturing employment.

Goderich had only eight SIC groups represented, four of which - the machinery industries, the chemical group, miscellaneous industries and the wood industries - accounted for nearly 80 per cent of the centre's manufacturing employment.

The centres not discussed above show distinct patterns of specialization. The food and beverage industries are outstanding in Harriston (68.4 per cent of the centre's manufacturing employment), Exeter (46.5 per cent), Mitchell (51.8 per cent), Palmerston (76.5 per cent) and Arthur (91.7 per cent). Elora had all its manufacturing employment in the furniture and fixtures industries. Wingham had 80.2 per cent in the two groups, wood and metal fabricating; New Hamburg, 71.6 per cent in the metal group; Mount Forest, 77.2 per cent in wood and electrical products industries; Seaforth, 75.4 per cent in leather, furniture and fixtures and metal fabricating industries; and Hensall has nearly 75 per cent of its manufacturing employment in the transportation equipment industries.

This analysis provides a significant input into the total evaluation of the growth prospects of the economic base of these selected urban centres by providing an evaluation of the proportion of employment in each centre in anticipated regional and provincial growth industries.

4. Infrastructure

Finally, one other criteria used in the evaluation of urban growth potential was each urban centre's infrastructure. This included water and sewage capabilities, the extent of industrial land available, transportation accessibility and, where data were available, cultural and recreational facilities.

(a) Water and sewage capability, Industrial land availability Due to the importance of water supply and sewage treatment in community and industrial development the capacities of each centre were valuated. Water was examined with respect to sources, maximum capacity of the municipal system, average daily consumption, and the amount of storage capacity. Sewage was given similar consideration with respect to the type of treatment utilized in each centre, its maximum capacity, the amount of average daily use, and the population for which the system was designed.

The availability of industrial land was also examined. The total amount of available industrial land, both private and municipal, was noted for each centre, as well as the amount of

serviced and unserviced industrial land. The extent to which this land was zoned was also noted.

The data used pertained to the year 1968 and changes may have occurred since that time which could considerably alter the analysis which follows. Further, various data sources were used. As there were conflicts in some of the data, it has been necessary to use judgment based on discussions with people in the Region. The following were the main sources used for this evaluation:

Fyfe, S. Waterloo Area Local Government Review, Department of Municipal Affairs, February 1970

Industrial Development Branch, Department of Trade and Development, 1969 Industrial Survey, 1969

Midwestern Ontario Regional Development Council, MODA Directory, 1969

Ontario Water Resources Commission, Middle Grand River Region, Water Supply Study, November 1966

Arthur - This centre has abundant water supplies and ample industrial land, all zoned, of which some 16 per cent is serviced (1968). No data are available regarding sewage capacity and usage, however, it is known that the sewage system was designed for a population of 5,000. As the 1968 assessed population was 1,271, Arthur would appear to have adequate water and sewage facilities.

Ayr - Little data is available regarding the water supply capacity and consumption of this centre, since water is obtained from private wells. Sewage is not treated and is disposed of by septic tank.

There are 45 acres of private industrial land, none of which appears to be serviced. An industrial park contains 35 acres of this land, suitable for light and medium type industries.

Centralia Industrial Park - As this Park is uniquely located in southern Huron County, close to Exeter and other centres, it is included in this discussion. The Centralia Industrial Park has ample water supplies, sewage facilities and industrial land. In 1968, there were some 257 acres of zoned industrial land in the Park, all of which were not serviced. Assuming that services can be easily provided, industrial land potential would be excellent. Sewage disposal poses few problems, for the system is quite adequate. The water supply appears to be ample and the water system easily meets industrial and housing needs with the exception of water pressure, for fire protection. Industries on the former air base have combined to build an elevated storage tank with some assistance from the Ontario Development Corporation. The system will fulfill their own needs but has limited capacity for future additional industries.

Clinton - The amount of industrial land available is minimal, but sufficient for the small industry. Water supplies

and services are more than adequate, but sewage facilities are close to full utilization.

Storm drains often overflow into the sewage system. At the time of the survey, a study was being undertaken to determine the feasibility of expanding the system, particularly for new subdivisions.

Clinton Air Force Base will be closed down by September, 1971. The Base does not have the necessary facilities to become an industrial park, although some sites are available for smaller industries. However, the Base has its own sewage system which is more than adequate to serve its needs. Consequently, the question arises as to the engineering and economic feasibility of either connecting the two systems (the municipality of Clinton with the military base) or perhaps in some way alleviating the municipal system's growing sewage problem.

Elmira - This centre's water and sewage facilities are quite favourable for future expansion. In 1968, there were 130 acres of industrial land available, 30 acres owned by the municipality. The land has water and sewer facilities available at the sites.

Elora - The water supplies of this centre are abundant for future population and industrial growth; however present sewage facilities are limited and usage is in excess of the

capacity of the system. Elora has over 90 acres of municipal and private industrial land which is adequate for light and medium industrial needs.

Erin - This centre has good water facilities and supplies, although their sewage system is limited, utilizing only septic tanks. Erin also has 100 acres of industrial land, only partially serviced and not zoned for industrial use.

Exeter - Exeter's water facilities are more than adequate. The capacity of their sewage facilities however is unknown although comments by the manufacturers in our survey were quite favourable. There are twenty-seven acres of zoned and serviced industrial land.

Fergus - Fergus, like many other centres, has good industrial land and water facilities, but their sewage system is currently operating at near capacity. Improvements in sewage facilities would give Fergus a more promising potential for future growth.

Galt - Of all the centres studied, Galt has the greatest amount of industrial land available for the potential industrialist. Their water system is adequate and, according to the Ontario Water Resources Commission, surrounding aquifers could boost this supply if needed. However, Galt's sewage system is at maximum capacity and improvements will be needed in the very near future.

Goderich - Goderich, like many other communities along the Lake Huron shoreline, utilizes that body of water as its source of

supply. Consequently, water resources present no problems.

In 1968, the sewage system was operating at 129 per cent of its designed capacity. Although the sewage treatment plant has adequate capacity from an organic viewpoint, sewer infiltration is causing a hydraulic overload problem.

There are 458 acres of industrial land, of which 158 acres is a fully serviced industrial park operated by the municipality.

Guelph - Guelph's industrial potential is very good. All land is zoned and servicing is carried out in stages as need arises. Water supply is good and more expansion could occur without taxing the present facilities. However, as in other centres, the sewage system is operating at near capacity and local improvements will be needed in this area.

Harriston - Harriston, has over 300 acres of privately owned industrial land, eight per cent of which is serviced. Assuming that servicing will continue as the demand arises, industrial land capabilities present few problems. Similarly, the water supply and distribution system is sufficient for future expansion. There are no data available regarding sewage facilities. It is known that the sewage system was designed for a population of only 2,200, so it may be assumed that Harriston will, in the not too distant future, have to improve their sewage facilities.

Hensall - Although the centre utilizes septic tanks, insufficient information was available to make judgements regarding sewage capabilities. Water sources and the capacity of the system are favourable. There are 12 acres of serviced industrial land, but such land is not zoned and consequently could be preempted by other uses.

Hespeler - This centre is currently suffering from an overburdened municipal sewage system for which improvements are urgently needed. There is ample industrial land available and the water system can serve additional loads. As in many other communities, Hespeler's limited sewage capacity does create problems for future growth of the centre.

Kitchener - With a 1968 assessed population of some 99,021, Kitchener has growth problems. A reasonable amount of industrial land is available. Additional land is limited due mainly to annexation problems encountered by the city in recent years. Their sewage system is designed for 100,000 people and again, the system is at maximum capacity. There is enough water available to allow for some future expansion, but as reported by Dr. S. Fyfe, the Ontario Water Resources Commission, and the City, future alternative sources will be needed. Consequently, the current position of Kitchener is not very favourable and improvements will be needed.

Listowel - The water facilities of this centre could easily allow for future community growth. At the time of the survey, the

sewage system was operating at capacity due to expanding industrial requirements. The Listowel lagoon and sewer system is presently in the process of being expanded. The centre has limited industrial land which is privately owned and partially serviced.

Milverton - The water and sewage systems are adequate to support additional future growth, although it would appear that larger water mains are needed in order to meet industrial requirements. While little municipal industrial land is available, there are 75 acres of private land which is partially serviced but not zoned.

Mitchell - This centre ranks most favourably with respect to water and sewage capabilities. Industrial land, water supply, and sewage services can all serve additional demand without straining present facilities.

Mount Forest - Mount Forest, like Mitchell, is in a favourable position. There are 78 acres of municipally owned industrial land, of which 35 acres is an industrial park. Only part of the land is serviced. Water and sewage facilities would appear to present no problem for future expansion.

New Hamburg - This centre also enjoys a favourable supply of all three factors; water, sewage facilities and industrial land. At least one-half of the zoned industrial land is serviced while both water and sewage facilities could easily service larger demands.

Palmerston - Water and sewage facilities are adequate to support additional growth. There are also 70 acres of private industrial land of which 40 acres are fully serviced.

Preston - Preston is in a relatively favourable position with respect to the future. Water and sewage facilities have few deficiencies. However, in 1968, Preston's total serviced industrial land was 75 acres which may be somewhat inadequate for the size of area it must serve. Also the addition of Peel Village to the present water and sewage system may limit the system's reserve capacity for expansion elsewhere in the community.

St. Marys - St. Marys industrial reserves cannot be disputed. It has almost 500 acres of zoned industrial land of which 13 per cent is serviced. However, although industrial needs can be met, the water supply system is antiquated. Over 50 per cent of the water pipes in St. Marys are less than four inches in diameter. Renovation of the system is presently taking place.

In 1968, the centre of St. Marys was using septic tanks for sewage disposal. A sewage treatment plant is presently under construction.

Seaforth - This centre's future is somewhat limited by its sewage treatment system. Current usage is beyond designed capacity. On the other hand, water facilities and reserves are more than adequate for both current and future use. There are 50 acres of pri-

vately owned industrial land, some of which is serviced with water and power. The lack of adequate sewage facilities precludes having a fully serviced industrial site.

Stratford - Stratford can fulfil all its industrial needs for a long period of time. Water facilities could also take on additional loads if required. At the time of our survey, sewage facilities were limited. The Stratford sewage treatment plant has been expanded somewhat with sophisticated nutrient removal treatment being planned. In the short run, sewage disposal will not pose a problem. However, on a long-term basis, there are limitations imposed by the capacity of the receiving stream.

Waterloo - According to 1968 data, the amount of industrial land available in Waterloo was good, with almost 500 acres available. Since then, the amount has been reduced to 125 acres. Consequently, Waterloo, because of its position in the "Golden Triangle", could experience an industrial land shortage in the future. Present water supplies will allow for small expansions but additional sources will be needed in the future. According to the Ontario Water Resources Commission, ground water sources of supply are available, but the quality may not be desirable due to a high sulphur content. Sewage facilities are good and additional loads may be added without taxing the capacity of the present system.

Wingham - Industrially, Wingham could absorb small industry, but a lack of industrial zoning plus the fact that only 15 acres are

serviced does impose limitations. Consumption of water can be increased greatly before the capacity of the system is reached. It must be noted that at this time the water system cannot withstand additional water pressure. This alone imposes limitations on future development. The sewage facilities of the town present little problem and usage could double (as of 1968) before the capacity is reached.

Summary This section has attempted to provide some insight into the future development potential of various urban centres in the Midwestern Ontario Region with respect to water, sewage and industrial land capabilities. Most significant is the constraint imposed by inadequate sewage facilities in most centres in the Region. Recognizing the increased population pressures being exerted on our urban centres, the increased tax burden placed on home owners, and the increased cost of services, it might be advisable for communities to work together in constructing some type of regional sewage facility where costs per capita could be reduced and more equitably distributed. Unfortunately, such an approach is not practical in many rural parts of the Region because of the distance between centres.

Finally, Table 7.10 has been prepared to show the additional population which could be supported by each centre under present water and sewage systems.

TABLE 7.10

GROWTH CAPACITIES OF URBAN MUNICIPALITIES - WATER AND SEWAGE

Municipalities	1968 Assessed Population	Additional Population Permitted By			Population Ceiling ³
		Water ¹	Sewage ¹	Present Services ²	
Arthur	1,271	24,160	3,500	3,500	4,800
Ayr	1,178	n.a.	n.a.	n.a.	n.a.
Centralia	1,200	0	1,396	0	1,200
Clinton	3,318	954	667	667	4,600
Elmira	4,333	2,165	13,043	2,165	n.a.
Elora	1,704	7,556	0	0	1,704
Erin	1,259	10,527	0	0	1,259
Exeter	3,170	8,650	n.a.	n.a.	n.a.
Fergus	5,008	10,407	1,010	1,010	6,000
Galt	34,996	13,566	0	0	35,000
Goderich	6,660	15,487	0	0	n.a.
Guelph	53,329	45,631	4,427	4,427	57,750
Harriston	1,640	2,049	400	400	2,650
Hensall	939	3,232	0	0	950
Hespeler	5,942	7,798	0	0	n.a.
Kitchener	99,021	54,455	0	0	99,021
Listowel	4,483	8,832	0	0	n.a.
Milverton	1,085	9,601	42,527	9,601	10,650
Mitchell	2,389	5,556	3,892	3,892	6,300
Mount Forest	2,804	8,752	1,236	1,236	4,050
New Hamburg	2,553	3,364	1,949	1,949	n.a.
Palmerston	1,670	16,284	2,504	2,504	n.a.
Preston	14,644	17,431	15,854	15,854	30,000
St. Marys	4,758	0	0	0	n.a.
Seaforth	2,203	4,153	0	0	2,200
Stratford	23,341	17,293	0	0	23,350
Waterloo	32,527	6,647	16,260	6,647	39,175
Wingham	2,970	0	2,970	0	2,975

¹Takes into consideration existing services (1968)

²Lower figure of the previous two columns

³Maximum total population (approximately) permitted by the capacity of water source, and/or receiving stream presently used for sewage output.

n.a. Not available.

Source: Department of Municipal Affairs, Community Planning Branch, Ontario Population Statistics, 1968.
Department of Trade and Development, Industrial Development Branch, 1969 Industrial Survey.
Midwestern Ontario Regional Development Council, MODA Directory, 1969 Edition.

The excess capacities of water facilities were determined using average per capita consumption. It assumes therefore that present residential and industrial consumption patterns will remain constant. Although storage capacity was not used in the determining of population ceilings, it has been taken into account in rating the water facilities of centres on page 337. Also the possibility of producing additional supplies from the presently used or nearby aquifers is not considered. Thus the ease that a municipality with a low excess capacity can rectify its water problem is not reflected presently. Further consideration of aquifer supplies will be incorporated in the subsequent Phase II report.

The excess capacities of sewage facilities were likewise determined using average per capita consumption. Caution must be used in the interpretation of the data since the flow can be below designed capacity and yet the plant can be overloaded from an organic viewpoint if flows received contain excessive BOD concentrations. The extent of organic flow and the capacity of receiving streams were not available for all sewage systems.

(b) Accessibility Relative accessibility by various modes of transport is a factor which must be evaluated in any definition of future urban growth potential. Accessibility will, for the most part, determine the degree to which people living in smaller urban centres and rural areas will be drawn to larger centres to obtain goods and services and for employment opportunities. Accessibility also influences the allocation of new and improved functions among

competing centres. In sum, the functional role of growth centres will be directly related to the degree of accessibility of such centres and therefore directly related to the extent and development of transportation linkages.

To derive a quantitative comparison of accessibility, an index was prepared, based on values attached to the relative advantages of centres in respect to four transportation modes - road, rail, water and air (Table 7.11). Significant variations occurred in the scores of each centre, ranging from a low of 38 for Elora to a high of 111 for Galt-Preston-Hespeler (See Summary Table 7.23 and its footnote, for a detailed discussion of the weighting system and the final accessibility ratings).

The quality of secondary roads within the journey-to-work zone of a centre plus its ease of access to freeways, heavily influenced the accessibility rating given to a centre. Quality of rail service has been conspicuously declining in recent years with direct negative impact on smaller urban settlements. This has not significantly altered the degree of accessibility to higher order centres, especially where there has been an improvement in road services.

High accessibility ratings were recorded by Galt-Preston-Hespeler, Guelph, Kitchener-Waterloo, Stratford and Harriston. All these centres are in close proximity to the Highway 401 Corridor

TABLE 7.11

ACCESSIBILITY⁽¹⁾, SCORES AND RATINGS BY URBAN CENTRES, MIDWESTERN ONTARIO DEVELOPMENT REGION, 1969

FUNCTIONAL TYPE OF CENTRE	ROADS			RAIL		PORTS			AIRPORTS		TOTAL Score (10)	ACCESSIBILITY RATING (11)	
	Freeways (400 series) Score (1)	Secondary Highways Score (2)	Rail Line Score (3)	Master Freight Terminal Score (4)	Type I Score (5)	Type II Score (6)	Type III Score (7)	Major Airports Score (8)	Secondary Airports Score (9)				
Regional Centres													
Kitchener-Waterloo	5	60	5	10	-	-	-	10	5	95	1		
Guelph	5	70	5	10	1	-	-	10	5	106	1		
Sub-Regional Centres													
Galt-Preston-Hespeler	10	70	5	10	1	-	-	10	5	111	1		
Goderich	-	30	5	1	-	-	5	5	5	51	4		
Listowel	1	40	5	5	-	-	-	5	3	59	4		
Stratford	3	60	5	10	-	-	-	10	3	91	2		
Full Convenience Centres													
Clinton	-	40	5	1	-	-	3	10	5	64	3		
Elmira	3	30	3	5	-	-	-	10	5	56	4		
Exeter	1	50	3	3	-	-	1	10	3	71	3		
Fergus	3	20	5	5	-	-	-	10	5	48	4		
Harriston	1	70	5	10	-	-	-	5	3	94	1		
Mount Forest	1	50	3	5	-	-	-	5	3	67	3		
St. Marys	3	30	5	5	-	-	-	10	3	56	4		
Seaforth	1	20	5	3	-	-	1	10	5	45	4		
Wingham	-	50	5	3	-	-	1	5	5	69	3		
Minimum Convenience Centres													
Arthur	3	40	3	5	-	-	-	5	5	61	3		
Ayr	10	40	3	5	1	-	-	5	5	69	3		
Elora	3	10	5	5	-	-	-	10	5	38	5		
Erin	3	40	3	3	-	-	-	10	5	64	3		
Hensall	1	40	3	3	-	-	1	10	5	63	3		
Milverton	3	20	5	5	-	-	-	10	3	46	4		
Mitchell	1	50	5	5	-	-	-	10	3	74	3		
New Hamburg	5	40	5	5	-	-	-	10	5	70	3		
Palmerston	1	50	5	10	-	-	-	5	3	74	3		

(1) See - Selected Measure 11 of Footnote to Table 7.12 for a detailed discussion of accessibility.

- Nil

Sources: Official Road Map, 1968, Department of Highways Ontario.
Economic Atlas of Ontario, published for the Government of Ontario by the University of Toronto Press, 1969.
Data from major railway companies.

except Harriston which has a high score because it is the hub of a highly linked system of rail and roads. This score could be misleading because any proposal to alter existing rail connections to this centre would dramatically reduce its accessibility rating.

On the whole, the general accessibility of centres seems to decline with distance away from Highway 401 and the developing Toronto to Stratford Corridor. Another conspicuous influence on the ratings seems to be related to route development and alignment. The majority of routes are aligned towards the Kitchener-Waterloo, Toronto and Hamilton Triangle i.e. in a southeasterly direction. Centres located on these transportation links have higher ratings than centres located off them. For instance, centres located between Highways 86 and 6 which merge at Guelph - i.e. Elmira and Elora, have lower than average accessibility ratings. Similarly, Milverton falls into the lower than average group.

(c) Recreation and Culture Recreational and cultural facilities are found throughout the Midwestern Ontario Region but their distribution is not balanced between rural and urban communities. For example, those facilities which are fairly representative of the rural communities include movie and drive-in theatres, sports arenas, billiard parlours, bowling alleys, dance halls, golf courses, curling clubs and local libraries. Centres which are fairly representative of the above functions are Clinton, Goderich, St. Marys, Fergus, Elmira and St. Jacobs.

On the other hand the urban concentrations, for example, the "Golden Triangle" centres and Stratford, have the above facilities, but also enjoy other cultural and recreational attractions such as auditoriums, art galleries, museums, symphony orchestras and theatrical facilities.

The disparities between the rural and urban facilities are quite natural, for it takes a large concentration of people to support financially, such amenities. This places the rural people, especially school children, at a disadvantage for they do not have the same access to such facilities as do their urban counterparts.

Also, a general lack of cultural and recreational amenities can be assumed to be one of the contributing factors to out-migration among the rural population, especially the young.

Generally the concentration and number of these facilities coincide fairly well with the functional hierarchy of centres.

There are certain activities which are of particular significance to the Midwestern Ontario Region. These include the Stratford Shakespearean Festival, the Octoberfest and the University Winter Carnivals in Kitchener-Waterloo, the Elmira Maple Syrup Festival, the Fergus Highland Games, the Exeter Rodeo, and the Zurich Bean Festival.

In addition, there are historical and cultural attractions which serve to illustrate the quality of the environment in the

Midwestern Region. Some of these include the Kitchener Market, the Doon Pioneer Village and School of Fine Arts, the West Montrose Covered Bridge, the Rockwood Academy, the Doon Pioneer Memorial Tower and the Grand Bend Dragstrip.

Each of these unique facilities adds to the individual character and "livability" of its centre, and has therefore been reflected in the weighting scores.

Summary of Evaluation Factors for Urban Growth Potential (Table 7.12)

In order to reduce the analysis carried out in this Chapter to a simplified form, 14 selected measures of potential urban growth were classified into a tabular arrangement. These are presented in the table entitled Preliminary Analysis of Selected Measures of Urban Growth Potential with a footnote added to clarify the mechanics involved in the quantitative presentation.

Measures 1, 2, 3, 6, 7, 9, 11, 12 and 14 were derived from analyses shown in Chapter VII; measures 4, 5 and 8 came from analyses of Chapters IV and VII; measure 10 stemmed from parts of Chapters III, IV and VII, plus information secured from field surveys, planning organizations and the services section of the Regional Development Branch; measure 13 was derived from information contained in Chapter VII and field surveys.

TABLE 7.12

PRELIMINARY ANALYSIS OF SELECTED MEASURES OF URBAN GROWTH POTENTIAL, MIDWESTERN ONTARIO REGION

URBAN CENTRES																							
SELECTED MEASURES	Arthur	Ayr	Clifton	Flintra	Flora	Fin	Exeter	Fergus	Galt-Preston-	Goderich	Guelph	Harrison	Kitchener-	Listowel	Milverton	Mount Forest	New Hamburg	Palmerston	St. Marys	Stratford	Stirling	Windsor	
	b	h	5	5	b	5	5	5	4	4	5	5	3	4	b	5	6	5	6	5	4	5	
Functional Type of Centre, 1969																							
Trade Area Size, 1969	4	5	4	3	4	4	4	3	2	2	2	4	3	2	4	4	4	4	3	4	1	4	
Trade Area Population, 1966	5	5	5	5	5	5	5	5	3	5	3	5	1	5	5	5	5	5	5	5	3	5	
Wholesale Sales, 1961	-	-	-	-	-	-	-	-	3	4	1	-	2	-	-	-	-	-	-	-	4	-	
Manufacturing Employment, 1968	5	5	5	4	5	5	4	1	4	2	5	1	4	5	5	5	5	4	5	2	5		
Provincial and Federal Government Services, 1969	5	5	4	5	5	5	5	2	3	2	5	1	4	5	5	5	5	5	5	2	4		
Population Growth of Centre, Change 1961 to 1968	4	5	4	1	3	2	4	1	1	4	1	4	1	3	4	4	3	2	3	4	3	4	
Retail Sales % Change 1961 to 1966	2	2	4	3	3	1	3	3	3	3	3	3	3	2	2	3	1	4	3	3	3	4	
Manufacturing Employment 7 Change 1961 to 1968	-	3	5	2	4	4	4	3	2	2	4	2	2	3	1	4	4	4	4	3	2	3	
Growth Prospect of the Economic Base, 1969	4	4	4	2	5	3	3	2	1	3	1	4	1	3	5	3	4	3	5	4	5	1	4
Accessibility Rating of Centres, 1969	3	3	3	4	5	3	3	4	1	4	1	1	4	4	3	3	3	3	4	4	2	3	
Cultural and Recreational Facilities, 1969	5	5	4	3	3	5	4	3	2	1	5	1	4	5	5	5	5	5	3	5	1	4	
Water and Sewer Spare Capacity, 1968 and 1969	1	5	3	2	5	5	3	3	3	3	3	3	3	2	1	2	2	1	4	4	3	3	
Availability of Industrial Sites, 1968 and 1969	1	4	4	2	1	4	4	1	1	1	1	2	3	3	4	1	2	1	1	4	1	4	

Note: Dashes refer to centre where data are not available or applicable.

FOOTNOTES: SELECTED MEASURES OF URBAN GROWTH

1. Functional Type of Centre, 1969

<u>Type</u>	<u>Description</u>	<u>Generalized Population Ranges</u>
1	Megalopolitan Centre	Above 500,000
2	Supra-regional Centre	250,000 to 500,000
3	Regional Centre	42,000 to 300,000
4	Sub-regional Centre	78,000 to 50,000
5	Full Convenience Centre	800 to 9,000
6	Minimum Convenience Centre	220 to 1,500

These types were selected using a list of typical functions, business and other services which draw people from the surrounding territory into the centre. The general criteria for rating centres included the kind and number of commercial and industrial facilities, transportation and communications, cultural and recreational facilities, and service facilities. In addition, the relative location of the centre, the pattern of trip frequencies and the distances travelled were considered to be significant in the final classification of the centre. Data sources included Dun and Bradstreet Reference Book, May 1969, telephone directories and statistical tabulations prepared by the Regional Development Branch.

2. Trade Area Size, 1969

The boundaries of the trading area of each functional type of centre were defined by the journey-to-work zones. The centres were then rated according to the following:

<u>Trade Area (square miles)</u>	<u>Rating</u>
Above 623	1
428 - 623	2
264 - 427	3
100 - 263	4
Less than 100	5

3. Trading Area Population, 1966

Trading area populations (defined by journey-to-work zones) were rated as follows:

<u>Trading Area Population</u>	<u>Rating</u>
Above 199,999	1
100,000 to 199,999	2
50,000 to 99,999	3
25,000 to 49,999	4
Less than 25,000	5

4. Wholesale Sales, 1961

Data are available only for centres of 5,000 population and over. The middle rating (3) includes the provincial norm for all urban centres. Other breakpoints were determined by a statistical procedure which normalized the distribution of this measure so that there was a relatively even number of centres falling above and below the middle category for all Ontario.

<u>Wholesale Sales (\$ 000)</u>	<u>Rating</u>
Above 78,229	1
43,740 to 78,229	2
14,510 to 43,739	3
1,000 to 14,509	4
Less than 1,000	5

Source: D.B.S. Census of Canada, Wholesale Trade, 1961, Vol. IV, Part 2.

5. Manufacturing Employment, 1968

Data are available only for selected centres. The middle rating includes the provincial norm for all centres for which data are available. The categories were determined as in measure 4 above.

<u>Manufacturing Employment, 1968</u>	<u>Rating</u>
Above 13,500	1
4,501 to 13,500	2
1,501 to 4,500	3
500 to 1,500	4
Less than 500	5

Source: Special Tabulations, Ontario Statistical Centre, 1970.

6. Provincial and Federal Government Services

Government services data were provided by the Provincial and Federal Departments of Public Works and the Provincial Department of Justice (Real Property Inventory, 1969). This inventory consisted of an 85 per cent sample of all existing government services. Additional coverage was derived from telephone directories. The government services provided were weighted by spatial area and intensity of service provided. Weighting was done on a scale of 1 to 5 for each service.

(i) Spatial Area of Service Provided

The following weights were used for the spatial area of service provided:

<u>Spatial Area</u>	<u>Weight</u>
Immediate urban area	1
Urban area plus adjacent townships (typically the journey-to-work zone)	2
County or district area	3
Economic region	4
Province	5

The following are typical examples of spatial area weights:

1. Provincial: Department of Highways - patrol yard
Federal: Postmaster General - Post Office
2. Provincial: Department of Justice and Attorney -
General - O.P.P. Detachment
Federal: National Revenue - Customs and Excise
Office
3. Provincial: Department of Lands and Forest -
General Office
Federal: Department of Manpower and Immigration
- Manpower Office
4. Provincial: Department of Social and Family Services
- Regional Office
Federal: Indian Affairs and Northern Development
- Regional Office
5. Provincial: Department of Justice and Attorney
General - Ontario Police College
Federal: Department of Transport - Headquarters
of Welland Canal Operations

(ii) Intensity of Public Use of Service Provided

Weight

Intensity of Use

1

- (a) This service is used primarily as an administrative unit.
- (b) The service is also offered by agencies other than provincial or federal agencies; i.e. private and/or municipal bodies.
- (c) The service is not a direct contact with the people it services. Typical examples include, at the provincial level, the Department of Treasury and Economics Savings Bank, and at the federal level, the main Administrative Offices of the Department of Agriculture.

2

This service caters to relatively few people in relation to the total trade area of the centre. Specifically, it caters to selective groups that are not dominantly from the trade area in which the service is located. The service may also be offered by agencies other than provincial or federal agencies; i.e. private and/or municipal bodies, and is used quite intensively by the general population. A provincial government example would include the Department of Correctional Services - Reformatory; and at the Federal Government level, an example would be the General Office of the Department of Indian Affairs and Northern Development.

3

This service caters to a moderate selective group of people on a day-to-day basis, but is not generally available to everyone who asks for it. There are certain prerequisites needed in order to qualify for the service. Examples would include the Provincial Department of Social and Family Services, General Offices, and General Offices of the Federal Department of Health and Welfare.

- 4 This type of service caters to people on a day-to-day basis. The service is geared to offer a specific function for a limited period of time. Ontario Provincial Police Detachments of the Department of Justice and the Attorney - General and Canada Manpower Centres of the Federal Department of Manpower and Immigration are examples.
- 5 This service caters to people at large on a day-to-day basis. The service can be used by anyone at any time of the year. A typical example would be post offices.

Finally centres were rated according to both the spatial and intensity weights based on an aggregation of scores for both Federal and Provincial services. In this way, the number and importance of all government services were ascertained for each centre. Ratings were allocated according to the following aggregate scores:

<u>Total Federal and Provincial Intensity and Spatial Weights</u>	<u>Rating</u>
Above 150	1
86 to 150	2
51 to 85	3
30 to 50	4
Less than 30	5

7. Population Growth of Centres, Percentage Change, 1961 to 1968

<u>% Change 1968/61</u>	<u>Rating</u>
Above 27.4	1
16.3 to 27.4	2
6.7 to 16.2	3
4.5 to 6.6	4
Less than 4.5	5

Source: Department of Municipal Affairs, Ontario Population Statistics, Community Planning Branch, 1968.
Department of Municipal Affairs, 1970 Municipal Directory,
Municipal Finance Branch, 1970.

The data are again normalized and percentage change categories chosen so that the middle range includes the provincial rate of change with an even distribution of centres above and below the provincial range.

8. Retail Sales, Percentage Change, 1961 to 1966

Data are available only for centres of 1,000 population and over. The data source is the D.B.S. Census of Canada 1961 and 1966.

<u>% Change 1966/61</u>	<u>Rating</u>
Above 96.3	1
59.3 to 96.3	2
36.0 to 59.2	3
10.0 to 35.9	4
Less than 10.0	5

The third rating includes the provincial rate of change of retail sales for this time period.

9. Manufacturing Employment, Percentage Change, 1961 to 1968

The data source is the same as in measure 5 with categories chosen by the same statistical procedure.

<u>% Change 1968/61</u>	<u>Rating</u>
Above 68.2	1
40.2 to 68.2	2
16.2 to 40.1	3
-23.9 to 16.1	4
Less than -23.9	5

Source: D.B.S. The Manufacturing Industries of Canada, Geographical Distribution, Section 9, 1961; Special Tabulations, Ontario Statistical Centre, 1970.

10. Growth Prospects of the Economic Base, 1969

A five fold rating was developed to rank each centre's growth orientation of the economic base utilizing to large extent information gathered in field surveys, from municipal and regional

planning organizations, the Regional Development Councils and the Services Section of the Regional Development Branch. In this context the following topics were considered:

- an evaluation of the proportion of employment in each centre in anticipated growth industries.
- a careful look at the tertiary sector, especially in terms of city and region-serving activities.
- the capacity of the centre to attract new employment noting recently announced new plants.
- the capacity of the centre to absorb further population growth especially in terms of housing and other elements of the socio-economic infrastructure.
- an investigation of the development to date of the transportation network serving a centre and especially in terms of providing residents with easy commuting access to employment and services and for the private sector, significant labour markets.
- the attractiveness of the centre in terms of cultural and recreational services.

<u>Growth Prospects</u>	<u>Rating</u>
High	1
Medium to High	2
Medium	3
Slow to Medium	4
Slow	5

11. Accessibility Rating, 1969

This indicator was developed from accessibility scores using four transportation modes - road, rail, water and air.

Road: The weights given to each centre depended on its proximity to the nearest freeway interchange and density of secondary road links. The data source was Official Road Map, 1969, Department of Highways, Ontario.

Rail: Using the Economic Atlas of Ontario, published for the Government of Ontario by the University of Toronto Press,

1969, and data from major railway companies, scores were derived by determining each centre's proximity to existing lines and major freight terminals.

Ports: A scoring system taking into consideration different types of ports and facilities and the accessibility of centres to these ports is the basis on which a total port score was developed. The classification of ports originated from data on handling and service facilities, maximum draft and wharves feet, as shown in the Atlas of Ontario 1969, (Page 91).

Airports: Scores related to the proximity of centres to major airports and to secondary airports (with full year operation).

The accessibility rating summed the road, rail, port and air-port scores for each centre which was then classified according to the following:

<u>Accessibility Score</u>	<u>Rating</u>
Above 91	1
75 to 91	2
60 to 74	3
45 to 59	4
Less than 45	5

12. Cultural and Recreational Facilities, 1969

This measure portrays in the aggregate the availability of such local amenities as: cinemas, arenas, billiard parlours, bowling alleys, dance halls, curling clubs, golf courses, local libraries, auditoriums, art galleries, universities, museums, symphony orchestras, theatres and so on. Some of these facilities are relevant only to the smaller urban areas. Other cultural and recreational facilities (such as the last six mentioned above) exist only when the level of demand is quite large. The availability of facilities are therefore ranked in relation to the size of each urban centre.

In addition, there are unique facilities such as historical features, festivals, athletic games, carnivals etc. which give special indentities to urban centres in which they occur. In sum, the availability of cultural and recreational facilities plus unique local events are rated for each urban centre according to the following scale:

<u>Availability of Cultural and Recreational Facilities</u>	<u>Rating</u>
Good	1
Moderate to Good	2
Moderate	3
Poor to Moderate	4
Poor	5

13. Water and Sewer Spare Capacity, 1968-1969

1968 data on these services were derived from the Ontario Water Resources Commission, field surveys conducted by the Regional Development Branch, and data from the 1968 Industrial Directory of Municipal Data for Ontario Municipalities, Industrial Development Branch, Department of Trade and Development. The following is a description of the characteristics involved in the ratings:

<u>Characteristics of Water and Sewage Systems of Centres</u>	<u>Rating</u>
The systems have ample unused capacity, relative to the centre's population, in both water and sewage.	1
The systems are adequate for moderate community expansion but there exists constraints in one of the services which may limit growth potential.	2
The systems are operating at or near capacity. Community expansion is limited unless the present system is extended or certain limiting problems within the system rectified.	3
Either the water or sewage system is inadequate to meet future population or industrial demands. There are definite growth constraints and capital outlays will be necessary before growth can be accommodated.	4
(a) Both water and sewage facilities are inadequate to meet current demands.	
(b) There are no municipal water or sewage systems.	5

14. Availability of Industrial Sites, 1968 - 1969

Among other things, the potential success of urban centres in attracting new manufacturing plants (and hence increased employment) depends upon the availability and the degree of development of suitable industrial sites. The following rating system attempts to assess not only the area of industrial land available (acreage), but also the equally important municipal action in controlling land costs (municipal ownership), land use (zoning by-laws) and the provision of services (i.e. water, roads and railways).

<u>Site Characteristics</u>	<u>Rating</u>
Ample land acreage owned, zoned and serviced	1
Ample land acreage not zoned but serviced, or zoned but not serviced	2
Limited land acreage, owned, zoned and serviced	3
Limited land acreage not zoned but serviced, or zoned but not serviced	4
No land available for industry	5

CHAPTER VIII

GOALS, NEEDS AND PRIORITIES

Introduction

This report began with a discussion of broad provincial goals for attaining the full social, economic and physical development potential of Ontario's ten development regions. Whether these goals are defined in terms of employment opportunities, social services or environmental protection, they all reflect the search for an enhanced quality of "livability" which is a concern shared by all regions in the Province, and indeed by all provinces of Canada.

What does differ from region to region is the nature and severity of the local problems which must be overcome if each region is to attain these goals. While the principal purpose of this phase of the regional development program is that of identifying the problems and needs of the region, a later phase will be concerned with devising strategies and plans for solving these problems and guiding future development.

As noted in the 1966 White Paper, Design for Development, Phase I, "Much of Ontario's regional development program will be accomplished by a thorough-going coordination of the programs, policies and spending of government departments ... on a regional

basis." One of the prerequisites to effective use of the provincial budget as a mechanism for carrying out regional plans is the classification of all provincial program spending according to the types of problems and needs these programs are designed to serve.

Currently, each department is engaged in a coordinated planning program of defining its own overall departmental goals and problem-solving program objectives. Since the problems with which these provincial programs are concerned all reflect the local needs of one or more regions in Ontario, our regional development plans must ultimately reflect the program objectives being defined by individual departments and their budgetary plans for solving these specific problems.

Rather than duplicate these parallel provincial efforts to define program objectives, this report addressed itself to the equally important task of supplying the essential regional ingredient to what is an overall provincial planning program - that is, providing an assessment of priorities among the major needs of each county and total area of the Midwestern Region. To maintain co-ordination with program planning and permit inter-regional comparison, potential regional needs have been standardized and classified in accord with eight broad functional categories being used for provincial program analysis.

For some of the issues covered, inadequate data precludes a staff judgement of local priorities at this time. In many other instances, the assessment must be considered to be preliminary. Major efforts have been made to incorporate the recommendations of other provincial departments. Since the best knowledge of regional needs can often be determined only by those who enjoy a day-to-day contact with local problems and aspirations, extensive use has been made of the Midwestern Ontario Regional Development Council's own five-year program recommendations and the parallel reports of the Midwestern Regional Advisory Board.

One of the most important purposes of this report is to provide these latter two organizations with the opportunity to review their assessment of local priorities, and with the participation of local municipalities and private citizens, to assist the Ontario Government in achieving a full appreciation of those regional conditions to which our plans and provincial budget should be directed.

The discussion of needs refers back to problems which have been analyzed in earlier chapters, and incorporates a brief commentary on the implications of prospective future changes in technology as these relate to specific regional needs.

1. Function of Economic Development

GOAL - To Assist Each Region to Attain its Full

Potential for Economic Development, Consistent with
Orderly and Rational Development of the Province as
a Whole.

This goal refers to the enhancement of income, output, employment, the economic base, occupational mix, and general economic efficiency of the Midwestern Region.

Important Problem Issues

One of the prime concerns in the Midwestern Region is the need to increase the general efficiency of the labour force; that is, to improve output per worker in all sectors of the economy. This is particularly important in the more rural areas of the Region which include Huron, Perth, and Northwest Wellington counties.

Consonant with increasing the efficiency of the labour force, is the need, in particular areas, to increase the diversity of employment opportunities. Because of the lack of employment opportunities, reduction in the agricultural labour force, and remoteness from the social and cultural amenities offered by the major urban centres, there has been considerable out-migration of population, particularly from Huron County and in Northwest Wellington. In addition, because of the lack of a diversified economic base in these areas, and the resulting restriction of employment opportunities, seasonal and annual fluctuations in employment have occurred.

In order to bring about greater diversity in the economic base of various areas in the Midwestern Region, as well as to provide additional employment opportunities, it will be necessary to increase the number of urban centres which are large enough to permit self-sustained growth in various economic activities.

Since agriculture is one of the more important sectors in the economic base of the Midwestern Region, it is desirable to improve productivity and gross sales per farm. This means increasing farm units to a viable size, promoting efficient agricultural resource-based industries to use local agricultural products, as well as improving the marketing and distribution of farm products.

These are the more important problem issues relating to economic development in the Midwestern Ontario Region that have arisen from the findings of the socio-economic base study and our discussions with people in the Region during the course of our field surveys. Table 8.1 lists needs relating to economic development with priorities given to each of the counties based on regional needs.

Technology

The Midwestern Region is ideally located in the centre of the urban complexes of Toronto in the east and the Windsor-Detroit area in the west. Future development envisions two major

Table 8.1

ECONOMIC DEVELOPMENT PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Increase per capita income and productivity	H	H	L	M	M
Reduce out-migration or increase population growth	H	M	L	M	M
Reduce unemployment; annual and seasonal	H	M	M	L	M
Increase male employment opportunities	H	M	L	M	M
Increase female employment opportunities	L	M	L	M	L
Increase or provide employment opportunities for skilled people and those with higher education	H	M	L	M	M
Increase manufacturing employment	H	M	L	M	M
Increase services and construction employment	H	M	L	M	M
Increase industry diversification in each sector	H	M	L	L	M
Increase urban centres for industry and services	H	M	L	M	M

H - High priority, M - Medium priority, L - Low priority

urban corridors; one stretching from the east of Metropolitan Toronto along Highway 401 to Windsor-Detroit, the other from the Windsor-Detroit complex along the Lake Erie shoreline to the Niagara Peninsula and the United States.

In the survey of manufacturers in the Midwestern Region, employers were asked what increases or decreases they anticipated in plant size, output and employment. Almost 93 per cent of the 135 firms surveyed were planning to either maintain or increase their plant size. Only one per cent anticipated a short-term decrease in plant size; the remaining six per cent were non-committal.

Over 63 per cent of the firms anticipated future increases in output - almost 32 per cent indicated that outputs would increase because of expanding markets; while over 25 per cent indicated that their outputs would increase because of mechanization and/or technological change. The remaining firms indicated that future increases in output would result from favourable tax structures, increasing public and private investment, proximity to related industries, and possible government incentives and/or subsidies.

As a result of anticipated technological changes, firms indicated that there would be additional need for more skilled and semi-skilled workers. This is particularly relevant to the counties of Huron and Perth which presently have a substantial proportion of

unskilled workers.

2. Function of Transportation and Communication

GOAL - To provide Increased Accessibility for
Urban and Rural Communities in the Economic
Movement of Persons and Goods.

This goal relates to transportation and communications and is examined in terms of accessibility - accessibility between centres of population; to natural resources; between centres of population and transportation facilities, such as airports; and between centres of population and recreation areas. Also implied is the need for better communication facilities and the need for comprehensive planning in the areas of transportation and communications.

Important Problem Issues

Present highway facilities are generally adequate to handle current traffic volumes. In certain instances, however, there is a need to improve highway connections to points within and beyond the Region. These include highway improvements and additions: (i) from Highway 403 and the Niagara Region north to Highway 401; (ii) from Stratford to Highway 401 and to the Kitchener-Waterloo area; (iii) to highway facilities along Lake Huron to accommodate increasing tourist traffic; (iv) and improved connections to the Owen Sound-Bruce Peninsula tourist region from North

Wellington County.

There is the possibility that certain rail lines may be discontinued in Midwestern Ontario. If this happens, and no alternative services are provided, many centres in the northwestern part of the Region would be without any passenger services.

Transportation and communications investment may be used as implementing tools to shape the form of future regional development. This would help in providing the most effective combination of transportation and communication modes to meet regional needs, while at the same time assisting to structure future urban growth.

The Kitchener-Waterloo area will be needing additional water supplies in the future if present growth patterns persist. One of the alternative means of securing water is a pipeline.

Technology

The introduction of hovercraft or hydrofoil services on the Great Lakes will become increasingly feasible for the transportation of both goods and people. Hovercraft have an advantage over the hydrofoil in that they can be used over either land or water, and the winter freezing of the Great Lakes would not interfere with the provision of regular services. With the imminent development of the Great Lakes Megalopolis and increased interaction

Table 8.2

TRANSPORTATION AND COMMUNICATION PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Road improvements for rural areas, smaller centres	L	L	L	L	L
Road improvements between larger urban centres	M	M	M	M	M
Improvement to airport facilities and services	L	L	L	L	L
Access to and from airports	M	M	M	M	M
Passenger rail services maintenance	M	M	M	M	M
Rail cargo services maintenance	L	M	M	M	M
Air freight services development	n.a.	n.a.	n.a.	n.a.	n.a.
Truck freight services improvement	M	M	M	M	M
Pipeline transport of natural resources	L	L	H	H	M
Natural resource development roads	n.a.	n.a.	n.a.	n.a.	n.a.
Port facility improvement	L	n.a.	n.a.	n.a.	L
Improved access to recreation areas	H	H	H	H	H
Scenic highway protection or development	?	?	?	?	?
Improvement of communications facilities	L	L	L	L	L

H - High priority, M - Medium priority, L - Low priority

? - Data not available at present

n.a. - Not applicable

between its major urban nodes, considerable demand will be generated for the development of fast and regular services on the Great Lakes.

GO-train type services may become desirable to connect the major centres of urban population in the Midwestern Region with other major centres of influence, such as Toronto and London. Such services would increase accessibility between the centres through reducing the time-distance between them and would also reduce road congestion. Increased use of containers in the movement of goods by rail is highly probable.

Containerization, which has already become important in the movement of general cargo, will continue to increase in importance. In order to provide this faster, more convenient service to the industries in the Midwestern Region, ports will need specialized handling facilities.

The most significant development in air transport in recent years has been air freight for semi-bulk goods. The new jumbo jet airport scheduled for Ontario will benefit the industries both in the Midwestern Region and in other areas of the Province.

3. Function of Community and Regional Environment

GOAL - To Develop Ontario's Community and Conserve
its Regional Environment in a Manner Which Will

Provide Optimum Livability for Current and Future
Generations.

This goal relates to community and regional environment and contains an examination of such items as pollution and use of natural resources, space, and land in urban areas.

Important Problem Issues

Of primary importance is an adequate supply of water and sewage facilities. Water shortages have been forecast by various agencies, this shortage being most critical in the "Golden Triangle" area of Waterloo County. Sewage, which also includes industrial waste, is of concern across the Midwestern Region, with many communities having facilities running at or near designed capacity.

The problem of competing land uses cannot be overstressed. In particular, the "Golden Triangle" and the Stratford area must optimize land use between agricultural and urban demands. The Mennonite community is being slowly encroached upon by the continuing growth of nearby urban communities.

The environment of Midwestern Ontario communities should be protected, especially from pollution. Fertilizers, pesticides, and other chemicals should be used carefully in order to preserve the ecological balance. In addition, the adverse social and

Table 8.3

COMMUNITY AND REGIONAL ENVIRONMENT PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Municipal water supply	M	H	H	M	H
Municipal sewage treatment	H	H	H	H	H
Reduction of air pollution	?	?	?	?	?
Reduction of scenic pollution	?	?	?	?	?
Reduction of environmental pollution by chemicals, pest controls	H	H	H	H	H
Urban noise abatement	?	?	?	?	?
Protection of prime farmlands	L	H	H	H	H
Preservation of prime recreational areas	H	H	H	H	H
Protection of fish and wildlife habitat	H	L	L	H	M
Reduction of erosion	M	L	L	L	L
Conservation of prime forest resources (woodlots)	H	M	L	L	M
Use and restoration of mining sites	L	L	L	L	L
Retain open space between urban centres	L	L	H	H	M
Prevent urban sprawl along highways	M	L	H	M	M
Concentrate urbanization in selected centres	H	M	L	M	M
Maintain variety of different sized centres	H	M	L	M	M
Maintain quality of urban neighbourhoods	?	?	?	?	?
Prepare urban and rural land use plans	H	H	H	H	H

H - High priority, M - Medium priority, L - Low priority
 ? - Data not available at present
 n.a. - Not applicable

environmental effects of production activities, whether it be pollution by air, water, soil or noise, should be minimized.

Technology

Although water and sewage facilities are now at, or will soon approach capacity, technological innovations in this area can solve some of the problems and needs of the Region. Water can be transmitted by pipeline from considerable distances. Again, sewage can be chemically treated, and by means of an osmosis process, water can be recycled into the municipal system for consumer purposes.

Other pollution control devices are being constantly introduced in order to protect the community and regional environment.

4. Function of Social and Economic Welfare

GOAL - To Provide Opportunities and Encouragement
for Every Individual to Meet His Basic Economic
Psychological and Physical Needs and Develop His
Fullest Potential for Self Sufficiency While
Maintaining Individuality, Dignity and Self-Respect.

Generally, this goal incorporates concern in the areas of the disadvantaged, both socially and economically; housing in

respect to variety and quality; equalization of opportunities for ethnic and immigrating groups; and the bringing of rural and urban living standards closer together. Although this goal is of some importance regionally, the Midwestern Region would appear to be in a favourable position, both socially and economically.

Important Problem Issues

One of the problems in the Region is the need of multi-service centres, accessible to as wide a range of people as possible. This is especially important in the more rural areas.

As can be seen from Table 8.4, data were not available to make a true evaluation of these needs. Consequently, value judgments have been made based on discussions with people knowledgeable about the Midwestern Region. Certain factors should nevertheless be mentioned, since they will affect any improvements in the socio-economic conditions of the people of Midwestern Ontario.

- (i) the relatively higher proportion of aged people in Huron and Perth counties;
- (ii) the relatively higher proportion of younger people in Waterloo County;
- (iii) the lower levels of income in the more agricultural and western part of the Region;

Table 8.4

SOCIAL AND ECONOMIC WELFARE PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Increase proportion of families living above poverty level	M	M	M	M	M
Reduce proportion of persons requiring welfare	L	L	L	L	L
Equalize opportunities for minorities, foreign born	n.a.	n.a.	n.a.	n.a.	n.a.
Reduce disparity between urban and rural income	M	M	M	M	M
Improve social services for low income groups	L	L	L	L	L
Improve social services for the aged	L	L	L	L	L
Improve social services for the young	L	L	L	L	L
Improve social services for family and marital counselling	L	L	L	L	L
Improve social services for physically and mentally handicapped	?	?	?	?	?
Group social services in accessible centres	M	M	L	L	L
Improve housing conditions	L	L	M	L	L
Reduce overcrowding in dwellings	L	L	L	L	L
Reduce housing cost for low income groups	M	M	M	M	M
Increase range of housing type choices	?	?	?	?	?

H - High priority, M - Medium priority, L - Low priority

? - Data not available at present

n.a. - Not applicable

(iv) the lack of low-cost housing in most parts of Mid-western Ontario.

Technology

Only one comment will be made with respect to technological innovation. With the increase in land costs, building costs, and interest rates, it is often difficult for families to purchase their own homes. The use of plastics as a building material in the future will considerably reduce housing costs. As a consequence, home ownership should be available to those desiring this type of accommodation. In addition, prefabricated and mobile homes should also offer lower priced accommodation.

5. Function of Health

GOAL - To Achieve the Best Possible Physical and Mental Health for Ontario Inhabitants at Minimum Public and Private Cost.

This goal is concerned with the reduction of the incidence of illness and the cost of health services. The goal also stresses the need to increase the availability of health services and facilities.

Other than medical facilities and services, little data were available relating to health objectives. Value judgements

Table 8.5

HEALTH PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Reduce infant mortality and premature deaths	L	L	L	L	L
Reduce communicable diseases	M	M	M	M	M
Reduce the incidence of dental caries	H	M	L	L	M
Reduce the incidence of mental illness	?	?	?	?	?
Reduce the incidence of drug addiction	?	?	?	?	?
Improve the medical facilities available	M	L	L	L	L
Increase the number of doctors, dentists, etc.	H	M	L	L	M
Improve ambulance services (any necessary mode)	M	M	M	M	M
Reduce public and private medical costs	M	M	M	M	M

H - High priority

M - Medium priority

L - Low priority

? - Data not available at present

have therefore been made with the assistance of persons knowledgeable of the Midwestern Ontario Region.

Important Problem Issues

Health facilities in the Region are adequate to service the present population. In the rural areas of the Region, however, there is a need for a greater number of doctors and dentists. The more rural counties are at a disadvantage both in terms of the time it takes to travel to the centres where professional attention is provided, and in the range of services available. Efforts are being made by the Ontario Department of Health (See Chapter 3) to attract medical and dental practitioners into areas designated as underserved by means of guaranteed incomes and educational bursaries for medical and dental students. The success of such programs have yet to be evaluated.

Technology

Past and present innovations in the field of health continue to seize the imagination of the world. As a consequence of modern medical technology, the inclination of medical staff is to locate in major urban centres, or where medical schools are available, so as to have maximum use of modern equipment and the opportunity for consultation with their colleagues on important medical problems. The rural communities are often deficient in

the availability of medical expertise. Therefore, the role of medical technology will probably remain a function of the larger medical centres. However, the influence of these medical centres must exert itself upon other centres.

6. Function of Public Safety

GOAL: To Reduce the Hazards to Individual Life and Property from External Events and Maintain Personal Security.

This goal involves minimizing the hazards to life and property from traffic, recreational, industrial, occupational and other accidents and reducing the incidence of crime and fire.

Important Problem Issues

The Midwestern Ontario Region maintains a fairly satisfactory level of public safety as compared to the Province as a whole. There are no problem issues that demand high priorities of attention. Medium priorities should be placed on the reduction of traffic deaths, occupational accidents and reduction of fire hazards.

In Huron County, high priorities should be placed on the reduction of traffic fatalities, and the need to reduce "other accidents" and a medium rating on reducing recreational accidents and industrial fatalities.

Table 8.6

Public Safety Priorities

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Midwestern Region</u>
Reduce traffic fatalities	H	H	L	M	M
Reduce recreation accidents	M	L	L	M	L
Reduce occupational fatalities	M	L	L	H	L
Reduce occupational accidents	L	L	M	L	M
Reduce other accidents	H	H	L	M	M
Reduce the incidence of crimes	L	L	L	L	L
Increase level of police protection	L	L	M	L	L
Reduce the incidence of fires	L	M	M	H	M
Reduce property damage from fires	L	M	M	M	M
Increase level of fire fighting protection	L	M	H	M	M

H - High Priority
M - Medium Priority
L - Low Priority

In Perth County, the problems relating to public safety demanding high priorities are the same as in Huron County. Medium priorities should be placed on the need to reduce fire hazards to the public.

In Waterloo County, the only high priority need should be attached to increasing the level of fire-fighting protection. Medium priorities should be placed on the reduction of occupational accidents, increasing police protection and reducing the incidence and property damage of fires.

In Wellington County, high priority should be attached to the need to reduce industrial fatalities and the incidence of fires. Medium priorities should be placed on the reduction of traffic fatalities, recreational accidents, accidents other than occupational, property damage by fire and the need to increase fire fighting protection. All other measures related to public safety should receive low priorities.

7. Function of Education

GOAL - To Provide Opportunities and Encouragement for Each Individual to Achieve His Highest Potential of Intellectual Development.

This goal emphasizes the need to improve the level of educational attainment and the quality of education.

Important Problem Issues

One of the basic concerns is to increase the number of students who attain a secondary school education. This is becoming increasingly important as a result of the educational demands placed on the individual by employers and by society itself. Because of these demands, there must also be an increased concentration on adult education in the Region. At the same time, education should become more personalized. Deficiencies in education would appear to be most evident in the counties of Huron and Perth.

Technology

In addition to educational television which is becoming increasingly prominent, the advent of television per se has greatly influenced our way of life and has made us increasingly aware of community and worldwide affairs.

The role of adult education will become increasingly important as technology develops in industry and the trades. The labour pool, particularly in Huron, Perth and Northwest Wellington counties, is relatively unskilled and consequently not prepared to meet the future requirements of modern society.

8. Function of Recreation and Culture

GOAL - To Enhance the Opportunity for Ontario Residents and Touring Visitors to Attain Maximum Recreational Enjoyment and Cultural Enrichment in the Use of Leisure Time.

Table 8.7

EDUCATION PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Reduce secondary school dropouts	M	M	M	M	M
Reduce pupil/teacher ratios	M	M	L	L	L
Upgrade smaller secondary schools	L	L	L	L	L
Increase post-secondary enrolment	L	L	L	L	L
Increase the number and variety of adult education courses	H	M	L	L	M

H - High priority
M - Medium priority
L - Low priority

This goal concerns itself with the provision of both public and private recreational opportunities and facilities, and the preservation of historical and cultural resources in the Region.

Important Problem Issues

Although the Midwestern Ontario Region has recreational resources, many of these are either undeveloped or not available for public use. On the other hand, most of the people live within day-use range of recreational areas outside the Region.

Table 8.8

RECREATION AND CULTURE PRIORITIES

<u>Needs</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Increase area in provincial parks	H	L	L	L	M
Increase area in regional and municipal parks	?	?	?	?	?
Increase public facilities for - campsites	H	L	L	L	L
- hiking trails	?	?	?	?	?
- picnic areas	M	M	M	M	M
- boating facilities	M	L	L	L	L
- swimming facilities	?	?	?	?	?
- snowmobile and ski trails	?	?	?	?	?
- scenic drives	?	?	?	?	?
- outdoor and indoor group sports	?	?	?	?	?
Increase private facilities for resorts	n.a.	n.a.	n.a.	n.a.	n.a.
Increase private facilities for weekend and vacation cottagers	H	L	L	L	L
Increase and improve libraries	?	?	?	?	?
Increase and improve art galleries, museums	L	L	L	L	L
Increase and improve television and radio stations	L	L	L	L	L
Increase and improve weekly and daily newspapers	L	L	L	L	L
Preserve historic sites and building	M	M	M	M	M

H - High priority, M - Medium priority, L - Low Priority
 ? - Data not available at present

Areas which are of outstanding natural beauty and recreational potential include the Niagara Escarpment, Waterloo Sand Hills and the Lake Huron shoreline.

Many cultural opportunities are now found only in larger metropolitan centres. Where applicable, recreational and cultural programs should recognize and promote cultural and ethnic diversities. The Region is well endowed with history, and the preservation of these cultural amenities should be encouraged.

With increased leisure and per capita income, the demands on the recreational and cultural resources of the Midwestern Region will continue to grow.

Overall Regional Priorities

Looked upon within the context of the Midwestern Ontario Region only, the eight functional goals have been examined and priorities allocated. These priorities have been based on the previous detailed discussion of each individual goal.

On a regional basis, no one goal was deemed to have a high priority. Medium priorities were assigned to economic development, transportation and communications, community and regional environment, health and recreation and culture. The remainder of the goals were deemed to be of lesser priority to the Region.

These included social and economic welfare, public safety and education.

The following is a tabulation of individual county priorities. Only those priorities which deviate from the Region will be noted.

In Huron County, economic development and community and regional environment, and recreation and culture received high priorities. Public safety and education goals both received medium priorities. The remainder of the functional goals in Huron County conformed to those of the Region.

Both Perth and Wellington counties conform fairly well to the regional goals. In the case of Perth County, education received a higher priority than for the Region as a whole; in Wellington County, health received a lower priority. A possible reason why Perth and Wellington counties conform fairly well to the regional priorities is the concentration of a large percentage of their populations in a major urban centre, specifically, Stratford and Guelph.

Of all the counties, Waterloo received the lowest priority ratings. This is probably due to its having the most diversified economic base and also being the most urbanized. The variations in this case pertained to the goals of economic development and

TABLE 8.9

OVERALL REGIONAL PRIORITIES

<u>Functional Goals</u>	<u>Huron</u>	<u>Perth</u>	<u>Waterloo</u>	<u>Wellington</u>	<u>Region</u>
Economic Development	H	M	L	M	M
Transportation and Communications	M	M	M	M	M
Community and Regional Environment	H	M	M	M	M
Social and Economic Welfare	L	L	L	L	L
Health	M	M	L	L	M
Public Safety	M	L	L	L	L
Education	M	M	L	L	L
Recreation and Culture	H	M	M	M	M

H - High priority

M - Medium priority

L - Low priority

health which received lower priorities than did the Midwestern Ontario Region as a whole.

CHAPTER IX

CONCLUSION

This report is the first phase of a development program for the Midwestern Ontario Development Region. It is, in essence, a socio-economic analysis designed to identify the problems and needs of the people of the Midwestern Region. It is part of the Provincial Regional Development Program which has been initiated in order to make the most efficient use of provincial budget and at the same time to assist each region to reach its potential within the framework of overall provincial requirements.

The next step in Midwestern Ontario is for the people who live in the Region and are experiencing the problems and pressures pointed out in the report to send in their reactions and suggestions to the Government of Ontario, through their Regional Development Council or directly to the Regional Development Branch. It is suggested that the Midwestern Ontario Regional Development Council and other local groups review this preliminary report and express their feelings about its contents. Preliminary objectives and priorities have been established for each County of the Region. These are meant to present one point of view, subject to discussion by the people in the area. In some instances, value judgements were made with limited or no available data. Comments and priorities

regarding these objectives are encouraged from the people of the
Midwestern Region.

While Phase I of this development program is an examination of the socio-economic base, Phase II will bring forward alternative development strategies for Midwestern Ontario and its various centres of opportunity. Rural and resource-based areas outside the influence of opportunity centres will be examined and alternative programs for development proposed.

The development strategy will attempt to optimize land use, rationalize the economic structure and hopefully bring a balance of social equity into the development process.

As with this report, Phase II will need to be scrutinized by the people of the Midwestern Region. Regional Development can only progress if the people of each region understand their problems and are prepared to set and accept priorities for solving them, priorities not only in the perspective of the region but of the Province as a whole.

APPENDIX A

SURVEY OF MANUFACTURING

- SAMPLE QUESTIONNAIRE

APPENDIX A

SURVEY OF MANUFACTURING

Regional Development Branch
Department of Treasury and Economics
880 Bay Street
Toronto 181, Ontario

Date: _____

Interviewer: _____

Interviewed: _____

Position: _____

A. Introductory Section

1. Name of Firm: _____

2. Address: _____

3. Telephone Number: _____

4. S. I. C. _____

5. Is this firm a branch plant? Yes _____ No. _____

6. Please give location of head office: _____

B. Employment and Labour Force

1. Please list the average number of employees in your establishment in 1968, by skill levels as indicated:

	PRODUCTION WORKERS*			Sub-total	Admin, Sales, Office & Other	Total
	Skilled	Semi-skilled	Unskilled			
Male	_____	_____	_____	_____	_____	_____
Female	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

2. Please list the average number of employees which your establishment had in 1961 or the closest year to 1961 for which data are available. If data are incomplete, please give as much detail as possible.

	PRODUCTION WORKERS*			Sub-total	Admin, Sales, Office & Other	Total
	Skilled	Semi-skilled	Unskilled			
Male	_____	_____	_____	_____	_____	_____
Female	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

*Skilled - Labour that requires extensive special training or a trade, for its satisfactory performance.

Semi-skilled - Labour having some training or experience, but requiring no extensive prior training.

Unskilled - Labour that requires practically no training or experience for its adequate or competent performance.

3. Would you please comment on your labour turnover. Please express labour turnover in terms of replacement employees as a percentage of average annual full-time employment in recent years. Do not include temporary, part-time or summer help. Also do not include lay-offs.

Unskilled	_____ %
Semi-skilled	_____ %
Skilled	_____ %
All production workers	_____ %
Administrative and Sales Personnel	_____ %

4. (a) Is there a shortage of qualified workers in the area?

Yes _____ No. _____

Unskilled Yes _____ No. _____

Semi-skilled Yes _____ No. _____

Skilled Yes _____ No. _____

Administrative and Sales Personnel Yes _____ No. _____

(b) Please list specific skill categories in which there is a shortage.

5 Other comments on labour and employment.

C. Manufacturing Inputs

- 1 Please list for 1968 your major raw materials, specify their main source(s), the mode of transport used, and the cost of transport if available. IF THE SOURCE IS WITHIN ONTARIO, PLEASE INDICATE THE CITY IF POSSIBLE. (see next page for examples)

	<u>Input Description</u>	<u>Source(s)</u>	<u>Transport Mode(s)</u>	<u>Transport Cost</u> (dollars or percentages)
(a)	_____	_____	_____	_____
(b)	_____	_____	_____	_____
(c)	_____	_____	_____	_____
(d)	_____	_____	_____	_____
(e)	_____	_____	_____	_____
(f)	_____	_____	_____	_____
(g)	Other _____	_____	_____	_____

Total Transport Costs _____

Examples:

Sheet Metal	Hamilton	rail, hired truck	\$10,000, \$4,000
Bearings	Stratford	own truck	\$2,000
Bearings	Germany	ship, rail	\$4,000, \$1,000
Hardwood Lumber	British Columbia	rail	100%

2. Have your inputs, their source, or the transport mode changed substantially since 1961 or the nearest year for which data are available?

Yes _____ No. _____

If yes, please indicate the appropriate changes for year _____.

	<u>Changes In</u> <u>Inputs</u>	<u>Changes In</u> <u>Source(s)</u>	<u>Changes In</u> <u>Transport Mode</u>
(a) _____	_____	_____	_____
(b) _____	_____	_____	_____
(c) _____	_____	_____	_____
(d) _____	_____	_____	_____
(e) _____	_____	_____	_____
(f) _____	_____	_____	_____
(g) Other _____	_____	_____	_____

D. Manufacturing Outputs

1. Product description - Itemized products should total at least 70% of the total value of production.

	<u>1968 Product</u> <u>Group Identification</u>	<u>% Of</u> <u>Total</u>		<u>1961 Product</u> <u>Group Identification</u>	<u>% Of</u> <u>Total</u>
(a)	_____	_____	(a)	_____	_____
(b)	_____	_____	(b)	_____	_____
(c)	_____	_____	(c)	_____	_____
(d)	_____	_____	(d)	_____	_____
(e)	_____	_____	(e)	_____	_____
(f)	_____	_____	(f)	_____	_____
		_____			_____
		100%			100%

3. What proportion of the sales of this plant are to:

	1968 PRODUCT GROUP					
	(a)	(b)	(c)	(d)	(e)	(f)
Wholesalers	_____	_____	_____	_____	_____	_____
Retailers	_____	_____	_____	_____	_____	_____
Consumer Directly	_____	_____	_____	_____	_____	_____
Building Contractors	_____	_____	_____	_____	_____	_____
Other Manufacturers	_____	_____	_____	_____	_____	_____
Government	_____	_____	_____	_____	_____	_____
	100%	100%	100%	100%	100%	100%

Note: (a) refers to product group identification of #1 above as does (b), (c), etc.

4. Transport Mode used in Product Distribution to Final Destination Point.

(a) Please state the percentage distribution of transport mode used for product distribution, expressed in terms of volume of shipments.

Mode Of Shipment	Product Group (a)		Product Group (b)		Product Group (c)		Product Group (d)		Product Group (e)		Product Group (f)	
	1968	1961	1968	1961	1968	1961	1968	1961	1968	1961	1968	1961
	%	%	%	%	%	%	%	%	%	%	%	%
Own Truck	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Commercial Truck	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Rail	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Air	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Ship	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

(b) Please state total cost for outward shipping _____

E. Location

1. Given present economic and locational conditions, please check (✓) which of the following factors are (a) favourable, (b) unfavourable, (c) neither favourable nor unfavourable, for the continuing operation of your firm.

Secondly, for the favourable and unfavourable factors, please rank those three to five factors which you deem to be most beneficial and most detrimental to your firm.

	<u>Favourable</u>	<u>Unfavourable</u>	<u>Neither</u>
(a) Proximity to good highways	_____	_____	_____
(b) Proximity to good rail service	_____	_____	_____
(c) Proximity to air services	_____	_____	_____
(d) Proximity to water transportation	_____	_____	_____
(e) Total costs of transportation	_____	_____	_____
(f) Proximity to natural resources	_____	_____	_____
(g) Proximity to sources of manufactured inputs	_____	_____	_____
(h) Proximity to markets (50 mile radius)	_____	_____	_____
(i) Availability of skilled labour	_____	_____	_____
(j) Availability of unskilled labour	_____	_____	_____
(k) Availability of administrative staff	_____	_____	_____
(l) Attitude of and relationship with trade union	_____	_____	_____
(m) Structure and cost of wages	_____	_____	_____
(n) Development of utilities and services:			
Water	_____	_____	_____
Sewage	_____	_____	_____
Electrical power	_____	_____	_____
Land suitable and available for plant	_____	_____	_____
(o) Compatibility of tax structure:			
Local taxes and incentives	_____	_____	_____
Provincial taxes and incentives	_____	_____	_____
Federal taxes and incentives	_____	_____	_____
(p) Availability of local business services	_____	_____	_____
(q) Cultural and recreational services	_____	_____	_____

	<u>Favourable</u>	<u>Unfavourable</u>	<u>Neither</u>
(r) Housing:			
Rental accommodation	_____	_____	_____
Owner accommodation (less than \$15,000)	_____	_____	_____
Owner accommodation (\$15,000 or more)	_____	_____	_____
Ontario Housing Corporation assistance	_____	_____	_____
(s) Other (please specify)	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

2. How many years has the plant been in operation at this location? _____

3. To the best of your ability, please indicate the years in which physical plant expansion was completed to allow major increases in output.

4. (a) Would you under present economic and operating conditions locate (a) in the same area Yes _____ No. _____; or (b) within a 100 mile radius Yes _____ No. _____, if you had the option of relocating at this time.

(b) Please state why and which other location would be preferable.

5. (a) If the operation of your firm requires the disposition of liquid, solid or gaseous wastes, how are they disposed?

(b) Do you have any plans for further pollution control?

F. Future Changes

1. Do you anticipate significant changes in the number of employees, plant size, or output of your establishment in (a) the short-term period (1970 - 1972) or, (b) the long-term period (1972 - 1981).

	SHORT-TERM			LONG-TERM		
	<u>Plant Size</u>	<u>Output</u>	<u>Employment</u>	<u>Plant Size</u>	<u>Output</u>	<u>Employment</u>
(a) Increase	_____	_____	_____	_____	_____	_____
(b) Decrease	_____	_____	_____	_____	_____	_____
(c) Stable	_____	_____	_____	_____	_____	_____
(d) Not Known	_____	_____	_____	_____	_____	_____

If possible, please indicate the approximate number of employees involved if an increase or decline is indicated.

Please indicate the number of acres presently occupied by your firm. _____

If an expansion is contemplated, how many additional acres will be required. _____

2. If either an increase or decrease is indicated above in the number of employees, will the need be for:

Increase Decrease Not Known
 (please check one line for each type of employment)

(a) Managerial or professional personnel	_____	_____	_____
(b) Clerical and other office staff	_____	_____	_____
(c) Skilled and semi-skilled production workers	_____	_____	_____
(d) Unskilled production workers	_____	_____	_____

3. If an increase in capacity or output is indicated, could the change be ascribed to: (please rank the first three factors you think may apply and check others which may be applicable.)

	<u>Rank</u>
(a) Mechanization and technological advance	_____
(b) Greater accessibility to resources and other input materials	_____
(c) Cheaper transport costs	_____
(d) Expanding market within:	
1. Midwestern Region (Huron, Perth, Waterloo and Wellington Counties)	_____
2. Elsewhere in Southern Ontario	_____
3. Elsewhere in Canada	_____
4. Foreign	_____

	<u>Rank</u>
(e) Higher level of skill in the labour force	_____
(f) Possible government incentives or subsidies	_____
(g) More favourable tax structure	_____
(h) Increasing public and private investment	_____
(i) Proximity to related industry	_____
(j) Other (please specify) _____	_____
_____	_____
_____	_____

4. If a possible decrease in capacity or output is indicated, could the change be ascribed to: (please rank the first three factors you think may apply, and check others which may be applicable.

	<u>Rank</u>
(a) Increasing costs of resources and other input materials	_____
(b) Increasing costs of transportation	_____
(c) Increasing wages and salaries	_____
(d) Increasing taxes	_____
(e) Increasing costs of suitable land	_____
(f) Increasing costs of fuel and power	_____
(g) Shortage of skilled labour or professional personnel	_____
(h) Lack of adequate services and utilities	_____
(i) Declining competitive position owing to distance from major markets	_____
(j) Declining demand for product	_____
(k) Lack of private and public investment	_____
(l) Other _____	_____
_____	_____
_____	_____

5. If your plant anticipates future expansion, will you need additional utilities such as power, roads, waste disposal, etc?

Please state what your future needs will be.

6. To predict future space needs, would you complete the chart below.

	1960	1970	1980
Square Footage			
Number of Floors			
Net Acreage			

G. Supplementary Questions

1. What were the two major factors influencing your decision to establish in this area?

2. Have changes in the technology of your manufacturing processes during the last ten years caused you to consider changing your locational requirements? Please describe.

3. Quite apart from your own business interests, what kinds of industry would you like to see in the area? Why?

4. What kinds of industry do you think are possible in the area? Why?

APPENDIX B

DERIVATION OF AGRICULTURAL INCOME

APPENDIX B

Derivation of Agricultural Income

Derivation of the various components of revenue and expenditure used in the county income analysis is shown below. In each case the Ontario figure was taken from Agricultural Statistics for Ontario, 1967, Department of Agriculture and Food, and where necessary the county figures were calculated as proportions of this. Table B (2) shows how the county figures were obtained. Table B (1) gives a detailed breakdown of income. The row numbers and titles listed in Table B (2) correspond to those in Table B (1).

TABLE B (1)

INCOME OF FARM OPERATORS FROM FARM OPERATIONS, PROVINCE OF ONTARIO AND COUNTIES, MIDWESTERN ONTARIO REGION, 1965

	Province Of Ontario (1)	Huron (2)	Perth (3)	Waterloo (4)	Wellington (5)
1. Value of Agricultural Products Sold ¹	1,101,135	52,986	47,830	37,625	42,817
2. Income in Kind	134,395	5,722	4,614	3,206	4,408
3. Supplementary Payments ²	364	-	-	-	-
4. Realized Gross Income (1, 2 & 3)	1,235,894	58,711	52,444	40,831	47,225
5. Operating and Depreciation Charges (DBS)	895,104	40,201	35,508	25,617	31,036
Taxes	42,900	1,920	1,538	979	1,314
Gross Farm Rent	23,115	623	412	149	277
Wages to Hired Agricultural Labour	111,257	1,468	1,359	1,253	1,277
Interest on Indebtedness	48,119	2,005	1,828	1,306	1,717
Total Machinery Expenses	113,291	4,992	4,732	2,668	3,724
Fertilizer and Lime	60,209	3,042	2,064	1,380	1,587
Other Crop Expenses	27,565	1,126	1,197	942	1,072
Feed	193,639	14,988	11,338	8,096	11,794
Other Livestock Expenses	44,829	1,248	1,125	902	1,124
Repairs to Buildings	33,450	1,248	1,125	902	1,124
Electricity and Telephone	12,216	3,555	3,209	2,524	2,873
Miscellaneous Expenses	61,663	15,158	10,803	20,669	26,959
Total Operating Expenses	772,253	15,158	10,803	20,669	26,959
Depreciation on Buildings	52,413	1,939	1,763	1,414	1,762
Depreciation on Machinery	70,438	3,104	2,942	1,534	2,313
6. Realized Net Income	340,790	18,510	16,936	17,214	16,189
7. Value of Inventory Changes	3,681	177	160	126	143
8. Total Gross Income	1,239,575	58,888	52,604	40,957	47,368
9. Total Net Income	344,471	18,687	17,096	17,340	16,332
10. Total Number of Operators	109,887	4,565	3,868	2,239	3,768
11. Adjusted to Eliminate Time Off The Farm	81,314	3,790	3,186	1,663	2,814
12. Value of Farm Capital	4,884,129	203,516	185,508	132,530	174,304
13. Six Per Cent Assumed Return to Capital	293,048	12,211	11,130	7,952	10,458
14. Residual - Return to Farm Operators	51,423	5,976	5,906	9,388	5,874
15. Residual - Return per Farm Operator (expressed in units)	468	1,309	1,527	4,193	1,559
16. Residual - Return per Adjusted Farm Operator (expressed in units)	632	1,577	1,873	5,645	2,087

- Nil

¹Dollar values are in thousands of dollars.

²Included, for counties in "Value of Agricultural Products Sold".

Source: See Table B (2).

TABLE B (2)

METHOD FOR ESTIMATING AGRICULTURAL INCOME BY COUNTY

<u>Row No.</u>	<u>Title</u>	<u>Source or Drivation</u>
1.	Value of agricultural products sold from Farming Operations -	Canada, Dominion Bureau of Statistics, <u>Census of Canada, Agriculture, 1966.</u>
2.	Income in Kind -	Ontario Department of Agriculture and Food, <u>Agricultural Statistics for Ontario, 1967, Table 5.</u> Provincial value was proportioned by population on census farms as contained in <u>Census of Canada, Agriculture 1966.</u>
3.	Supplementary Payments -	Ontario Department of Agriculture and Food, <u>Agricultural Statistics for Ontario, 1967, Table 5.</u> (Included in 1 above for counties)
4.	Realized Gross Income -	Total (1 + 2 + 3)
5.	Operating and Depreciation Charges:	
	Taxes;	<u>Census of Canada, Agriculture, 1966, Table 24.</u>
	Gross Farm Rent;	
	Wages to Hired Agricultural Labour	
	Interest on Indebtedness -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by farm capital value as contained in <u>Census of Canada, Agriculture, 1966, Table 22.</u>
	Total Machinery Expenses -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by value of machinery and equipment as contained in <u>Census of Canada, Agriculture, 1966, Table 22</u>

TABLE B (2) cont'd

Fertilizer and Lime -	Dominion Bureau of Statistics, <u>Catalogue No. 46-207.</u>
Other Crop Expenses -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by cash receipts from farming operations (number 1 above)
Feed; Other Livestock Expenses -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by value of livestock as contained in <u>Census of Canada, Agriculture 1966, Table 22.</u>
Repairs to Buildings -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by values of land and buildings as contained in <u>Census of Canada, Agriculture, 1966, Table 22.</u>
Electricity and Telephone; Miscellaneous Expenses -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by cash receipts from farming operations. (Number 1 above.)
Total Operating Expenses -	Subtotal
Depreciation on Buildings -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by value of buildings as contained in <u>Census of Canada, Agriculture, 1966, Table 22.</u>
Depreciation on Machinery -	<u>Agricultural Statistics for Ontario, 1967, Table 4.</u> Provincial value proportioned by value of machinery and equipment as contained in <u>Census of Canada, Agriculture, 1966, Table 22.</u>

TABLE B (2) cont'd

6.	Realized Net Income -	(4 - 5)
7.	Value of Inventory Changes -	<u>Agricultural Statistics for Ontario, 1967, Table 5</u> Provincial value propor- tioned by cash receipts from farming operations (Number 1 above)
8.	Total Gross Income -	Total (4 + 7)
9.	Total Net Income -	(8 - 5)
10.	Total Number of Operators	<u>Census of Canada, Agriculture, 1966, Table 14</u>
11.	Adjusted to Eliminate Time Off the Farm -	<u>Census of Canada, Agriculture, 1966, Table 14</u> Number of working days per year calculated as 260.
12.	Value of Farm Capital -	<u>Census of Canada, Agriculture, 1966, Table 22</u>
13.	Six Per Cent Assumed Return to Capital -	An assumed value based on various sources
14.	Residual - Return to Farm Operators -	(9 - 13)
15.	Residual - Return per Farm Operator (expressed in units) -	(14 ÷ 10)
16.	Residual - Return per Adjusted Farm Operator (expressed in units) -	(14 ÷ 11)

APPENDIX C

A STRATEGY FOR SOUTHWESTERN ONTARIO

A STRATEGY FOR
SOUTHWESTERN ONTARIO DEVELOPMENT

A Joint Statement
by the
Department of Treasury and Economics
and the
Department of Municipal Affairs

March 17, 1970

FOREWORD

This statement of development strategy for Southwestern Ontario has benefited substantially through receipt of original ideas and advice from both the Niagara and the Lake Erie Regional Development Councils and the Haldimand - Norfolk Joint Study Committee. Successful planning coordination requires not only that interdepartmental communication among civil servants be maintained on a continuing basis, but also that all multi-county plans produced by either Department for Southwestern Ontario receive suggestions and advice from Regional Development Councils, local municipalities and units of Regional Government, and the private sector.

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A STRATEGY FOR SOUTHWESTERN ONTARIO DEVELOPMENT

A. Background

In defining goals for Ontario's Regional Development Program (Design for Development, Phase I, April 5, 1966), the Hon. John Robarts, Prime Minister of Ontario, stressed our belief that "regional plans and priorities should always contribute to the total environmental development and economic performance of the (whole) province" and that "regional development policies are... aspects of a broader provincial growth policy".

To achieve this wider, multi-regional coordination, certain administrative machinery was created, including a Cabinet Committee on Policy Development, Chaired by the Prime Minister, and an Interdepartmental Advisory Committee on Regional Development, Chaired by the Deputy Treasurer and Deputy Minister of Economics. The regularly scheduled meetings of these committees have ensured, and will continue to ensure, overall Provincial policy coordination among departments in the development of all regions.

In practice, it has also been found advisable to implement this spirit of coordination at the civil servant level through the formation of ad hoc interdepartmental and intergovernmental study

committees. Such committees have been examining the inter-regional planning issues involved in the future growth of the metropolitan Toronto and Oshawa areas.

B. Areawide Coordination in Ontario's High Performance Regions

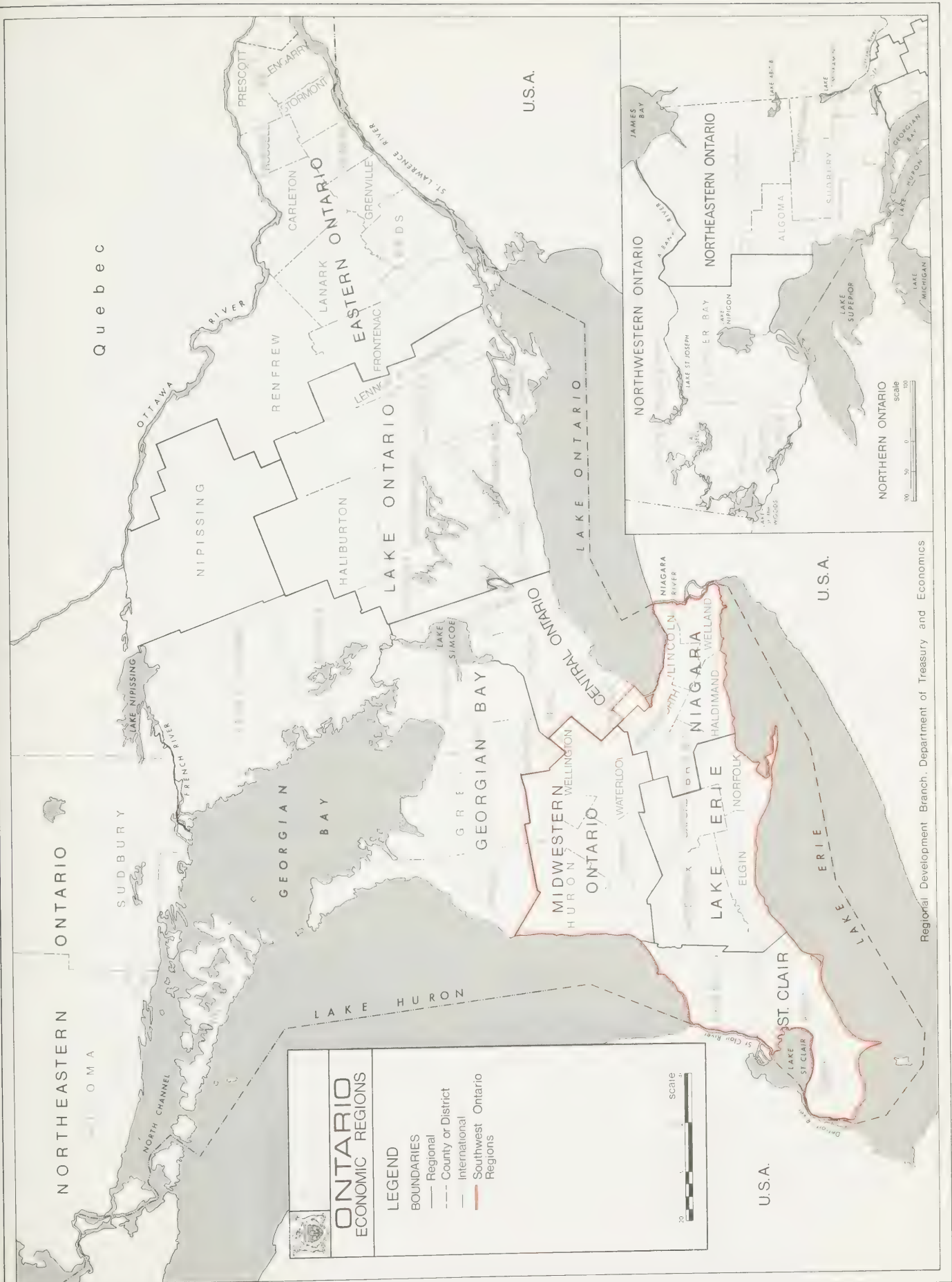
The work of these committees has demonstrated that there is a fundamental social and economic relationship between the high performance Central Ontario region and the almost equally dynamic remainder of Southwestern Ontario. No one of these regions can be effectively planned in isolation from the others.

Since the need for inter-regional coordination has already been recognized and is now being served in the Toronto and Oshawa areas, this paper will concentrate on issues requiring coordination in the Niagara, Midwestern Ontario, Lake Erie and St. Clair regions, hereafter referred to as Southwestern Ontario.

C. Inter-Regional Coordination in Southwestern Ontario

Recent events have demonstrated the need for inter-regional coordination of development planning in the heavily urbanized and rapidly developing southwestern Ontario regions of Niagara, Midwestern Ontario, Lake Erie and St. Clair. (See Figure 1).

Perhaps the most dramatic of these current happenings has been the emergence of the Lake Erie foreshore as a major



future corridor of heavy industrial development for the next 30 years. The widely spaced site plans of the Steel Company of Canada, Dominion Foundry and Steel Company, Texaco and Ontario Hydro demonstrate the urgency of planning lakeshore development and conservation as a continuous system from Windsor to Port Colborne, requiring collaboration among three closely related economic regions.

One element in this lakefront planning must be the conservation and development of water-oriented recreation resources. Land-oriented recreation is also important to Southwestern Ontario and a multi-regional recreation system plan - the Niagara Escarpment Study - is now being evaluated.

Throughout Southwestern Ontario, inland cities are increasingly turning to Lake Erie and Lake Huron for their future supply of municipal water. The most economical use of these long distance distribution pipelines requires inter-city collaboration and inter-regional planning.

Finally, under the supervision of the Advisory Committee on Regional Development, the Regional Development Branch of the Department of Treasury and Economics and the Department of Municipal Affairs are nearing completion of plans for Southwestern Ontario and evaluation studies and plans for the Haldimand-Norfolk area. The studies of both departments and the Haldimand-Norfolk

Joint Study Committee reveal the presence of very strong future urbanization pressures within Southwestern Ontario. The best guidance for solutions to such growth problems cannot be found in planning perspectives which are limited by the artificial boundaries of a single municipality, a single county or even a single region.

It is the purpose of this policy paper to provide a broad regional setting for viewing Southwestern Ontario's overall development, to apply Ontario's existing regional development goals as development objectives for Southwestern Ontario, and to explore the implication of these development objectives for planning in the Haldimand-Norfolk area.

D. Southwestern Ontario's Regional Setting

As an initial step in preparing regional plans, the Regional Development Branch carried out a massive analysis of trends in the Province, using 63 indicators of social and economic change. In this study, changes within the smallest geographic unit for which data were available were compared with the rate of change for the Province as a whole. Five levels of overall performance have been identified: very high, moderate, average, moderately low and very low.

Figure 2 shows the overall trends in Ontario by county,

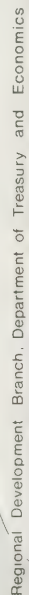


as revealed by all 63 indicators. Figure 3 shows the change in total population of the Province by townships between 1951 and 1966. In each case we can clearly see the very high relative growth rate around the western end of Lake Ontario, extending throughout Southwestern Ontario to the international border at Windsor and Sarnia. It is conspicuous that the only sizable areas which have been by-passed by this generally continuous belt of prosperity and growth are those southern tier counties and townships which will experience the most direct and immediate impact from development of the Stelco and Dofasco sites.

The rush to acquire waterfront industrial sites along Lake Erie and the multi-regional growth of Southwestern Ontario are not coincidental events but, at least in part, the consequence of international geography and trade patterns which are shaping new megalopolitan forms of human settlement.

In his Developing Urban Detroit Area Research Project, C.A. Doxiadis identifies an embryonic "Great Lakes Megalopolis" extending roughly from Milwaukee to Pittsburgh by way of Chicago, Detroit and Cleveland, with a "Canadian Extension" along the north shores of Lakes Erie and Ontario and the St. Lawrence River to Quebec City; and another extension from the Niagara-Buffalo area into New York State towards the so-called "eastern megalopolis". Similarly, Change, Challenge, Response: A Development Policy for New York State, published in 1964 by the State Office for Regional

Quebec



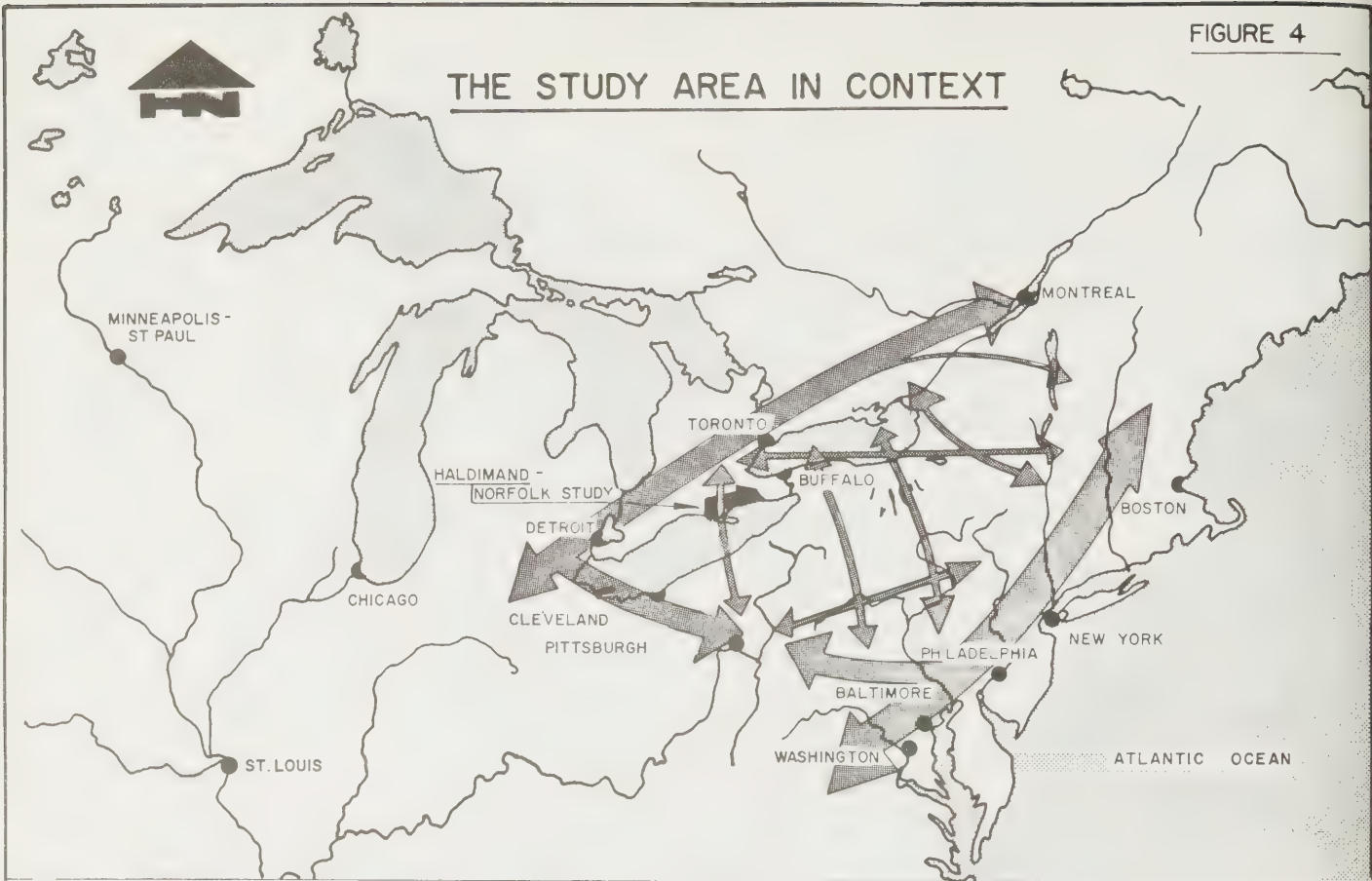
Development, identifies two major development corridors, Detroit-Montreal and Washington-Boston, with offshoots converging on Pittsburgh; and several secondary development corridors, one extending roughly from Hamilton towards Boston. (See Figure 4)

Both studies, then, agree on the emergence of two major urban complexes on the "macro-regional" scale, one in the southern part of the Great Lakes Region, and one on the eastern seaboard. Both reports see a developing link between them, running from Niagara Falls-Buffalo to Boston.

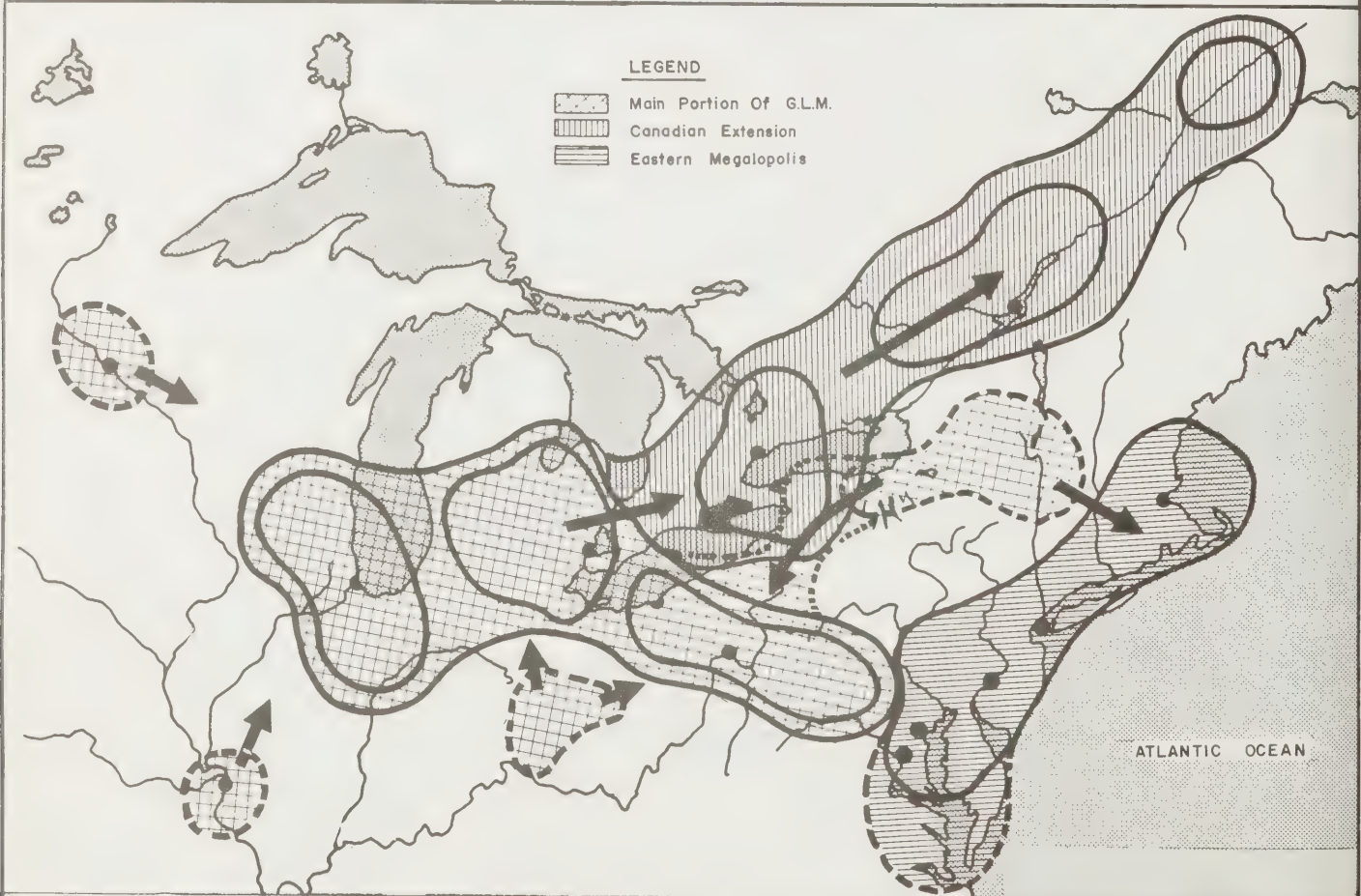
It is thus possible to envisage the gradual emergence of a major development corridor from the eastern shore of Lake Michigan to the Atlantic, by way of Southwestern Ontario and the Mohawk Gap. For Ontario, this would mean something analogous to the "401 Corridor" (or, in Professor E. G. Pleva's term, the "Grand Trunk Corridor") extending from Windsor and Sarnia through London and Waterloo-Kitchener to Niagara Falls-Welland and Toronto.

Admittedly, this is impressionistic. But, if one makes the reasonable assumption of a gradual dismantling of U.S. - Canada trade barriers, and if one considers the probable long-term development pattern of east central North America as a whole (and we will increasingly have to think at this scale), the prospect is not at all unrealistic. It is certainly significant that four of the largest industrial developments announced in Ontario in the last

FIGURE 4



DEVELOPMENT CORRIDORS, NEW YORK STATE after "CHANGE, CHALLENGE, RESPONSE"



GREAT LAKES "MEGALOPOLIS" after DOXIADIS

few years are in this corridor: Ford at Talbotville, Dofasco at Port Burwell and Stelco and Texaco at Nanticoke. The implication is that Ford, Stelco, Dofasco and Texaco are not isolated occurrences which merely happened to occur fairly close to each other, but are probably the forerunners of a new "industrial revolution" among the communities and farmlands of Southwestern Ontario.

As previously noted, industrialization is already precipitating sustained multi-regional urban growth which can be expected to accelerate to very sizable proportions over the next three decades. With proper advance planning, the 12,000 square miles of Southwestern Ontario should readily accommodate all prospective land use requirements.

We also acknowledge the challenge of avoiding the urban sprawl, congestion, high social costs, loss of prime farmland and environmental erosion which have frequently characterized North America's other super-city, the Atlantic Coastline Megalopolis.

The realization of Southwestern Ontario's full potential and minimization of these implicit environmental conflicts depend upon the fulfillment of existing Provincial regional development goals and the application of these goals as planning objectives in shaping future growth in the Niagara, Midwestern Ontario, Lake Erie and St. Clair regions.

E. Ontario's Regional Development Goals:

In the White Paper, Design for Development, Phases I and II, presented in the Legislature by the Prime Minister and the Minister of Municipal Affairs, the Ontario Government outlined certain fundamental regional development policies. These were later elaborated by the Treasurer and Minister of Economics in November 1969, as follows:

1. That the vital role of the private sector be recognized, that its contribution to the Provincial economy be continuously assessed in view of Provincial needs and resources, and that Provincial policies be formed to encourage a rational expansion of the private sector.
2. That individuals be encouraged to develop their full capabilities through provision of a climate of expanding social and economic opportunities for each region.
3. That regional and resources policies encourage adequate development of the natural environment while conserving the aesthetic and ecological balance qualities of that environment.
4. That the timing and impact of Ontario's large and expanding public expenditures be effectively planned and co-ordinated to fulfil, in an orderly way, the needs of regions in the Province as well as the Province itself.

5. That this be a Program for Regional Development which must necessarily involve a working partnership between all of the people of Ontario and Government.

F. Development Objectives for Southwestern Ontario:

Southwestern Ontario is characterized by a large number of medium-sized communities, distributed in depth throughout a compact urbanizing area which extends approximately 180 miles from east to west and 60 miles northward from Lake Erie. Many of the area's communities have developed a fair degree of economic specialization in chemicals, primary metals, transportation equipment, agricultural equipment, and in educational, health and insurance services. There is no evidence that this specialization will or should soon end. For the area as a whole, it has provided a very diversified economic base, and for individual communities, many of the traditional social and economic problems of one-industry towns have been mitigated by the proximity of nearby communities providing alternative sources of employment.

The following development objectives are designed to build upon this historic capability for regional economic strength through local specialization while at the same time enhancing community social diversity through improved inter-regional mobility.

Regional plans for Southwestern Ontario should, therefore,

seek to achieve:

1. A form of development which combines regional economic diversification with industrial specialization in sub-regional zones and improves community social balance through diversified regional employment opportunities.
2. A distribution of economic growth opportunities for private industry which provides employment within commuting range of all parts of the four Southwestern Ontario regions.
3. A nodalized decentralization of urban growth which avoids unsightly and uneconomic sprawl or strip linear development, but rather, builds upon existing centres' capacity for growth, and distributes this growth among a large enough number of centres to retain a human scale in the size of future communities, thus ensuring economies of scale without the diseconomies of congestion.
4. A transportation system which shapes the pattern of future urban growth as a deliberate instrument of long-term development policy, provides community residents with easy commuting access to a variety of nearby employment, cultural and service centres, and provides employers with the ready availability of an expanded and diversely skilled labour market, significantly larger than that of any single community.

5. An environmental protection which, while accommodating population growth, ensures the economic provision of water and sewer services along multiple-service corridors, and protects the future use of the region's strategic waterfront and escarpment recreation lands and prime farm soils.
6. A flexibility in planning which recognizes the many unpredictable elements in future technology, modes of transportation, industrial location and personal life style and maintains the region's capacity to accommodate such changes; a realism which utilizes the existing hierarchy of urban centres for economic distribution of public services, but acknowledges the variability in individual community growth which can never be precisely predicted.
7. A pattern of partnership in planning which encourages local participation in each critical stage of the planning process and ensures that resulting action programs reflect an amalgam of local municipal, county, regional and Provincial viewpoints.

G. Implications for Planning in the Haldimand-Norfolk Area

For the past 12 months, the Department of Municipal Affairs in cooperation with other departments and the Haldimand-Nor-

folk Joint Study Committee have been reviewing the growth implications for Haldimand and Norfolk counties of Stelco's decision to develop a new steel plant at Nanticoke. Simultaneously, the Department of Treasury and Economics' Regional Development Branch has been analyzing overall trends, problems and future development opportunities in the wider Niagara and Lake Erie regions. The two departments will be presenting complementary plans for this area of Southwestern Ontario in the near future, and both agree that the foregoing regional development goals and objectives suggest the following planning principles for the Haldimand-Norfolk area:

1. Full use should be made of the development potential of existing urban centres in planning the distribution of future regional growth.
2. Any new centres required should be located along major prospective transportation corridors where strategic gaps occur in the current distribution of growth centres. Such new centre sites should be selected in areas where they can draw upon the employment, cultural and service facilities of existing centres and receive future population overflow from the larger of such neighbouring centres.
3. Wherever development alternatives permit a conscious choice among new sites for residential or industrial use, care should be exercised in order to minimize

the loss of better soils or recreation sites and to avoid disturbing the local ecology.

4. The selection of new centre sites should give careful consideration to the possible economies of shared regional water supply systems. Larger inland centres of Southwestern Ontario are already planning to draw upon the Great Lakes for future water supplies. The water distribution pipelines designed to serve these centres should be planned on a regional basis.
5. Future lakefront industrial sites should be consolidated where services and access roads can be shared and should be in locations which present the least conflict with the most attractive existing and future recreation areas.
6. Any major future transportation facility planned for the Lake Erie shoreline should be located close enough to the lakefront to serve the east-west travel desires of industrial and private vehicular travel, but far enough inland to ensure that induced urban growth does not impinge upon either lakefront industrial, recreational, or scenic-drive sites.
7. The precise location of this Lake Erie transportation facility, its access points and its interchanges with north-south connections to non-lakefront centres should

be planned with the intent of enhancing the nodal function of strategic southern tier growth centres which will be named in the development plans for the regions.

8. The priority assigned in scheduling major transportation improvements will reflect both prospective future traffic demand and such development objectives as:
 - a) Encourage the location of employment opportunities within those areas which have experienced below average rates of social and economic development in recent years.
 - b) Forestalling the community deterioration and travel congestion which could result from a significant increase in industrial and commuter traffic along existing highways.
 - c) Minimizing the danger of uncontrolled linear urban sprawl filling in the undeveloped lands between communities along existing highways leading to major future industry and employment concentrations.
9. Success in avoiding indiscriminant scatteration of future urban growth in Southwestern Ontario depends very largely upon effective limitation of access along regional highways, control of subdivision development and concentration of future water and sewage treatment facility investment in selected growth centres. All regional plans should be in accord with Provincial commitments to:

- a) Incorporate access limitation features in all major new improvements to inter-regional and inter-city highway facilities.
- b) Maintain strict control over residential and commercial subdivision along those inter-regional and inter-city highways which must serve increasing traffic volumes until new limited access facilities can be provided.
- c) Allocate priorities for new municipal water supply and sewage treatment facilities in accord with regional plan designation of future growth centres.

APPENDIX D

RELATIVE GROWTH PERFORMANCE OF MANUFACTURING

APPENDIX D

RELATIVE GROWTH PERFORMANCE OF MANUFACTURING IN THE
MIDWESTERN ONTARIO REGION

Intra-regional variations of manufacturing can only be fully understood by carrying out a detailed structural analysis of industrial composition. The relative growth of the 20 major industrial groups was therefore charted, comparing growth trends in employment in the counties and region to a provincial norm. The relative growth of the industrial groupings was analyzed by county for the years 1961-1964 and by Region for the years 1961-1964 and 1964-1968.

1. Methodology

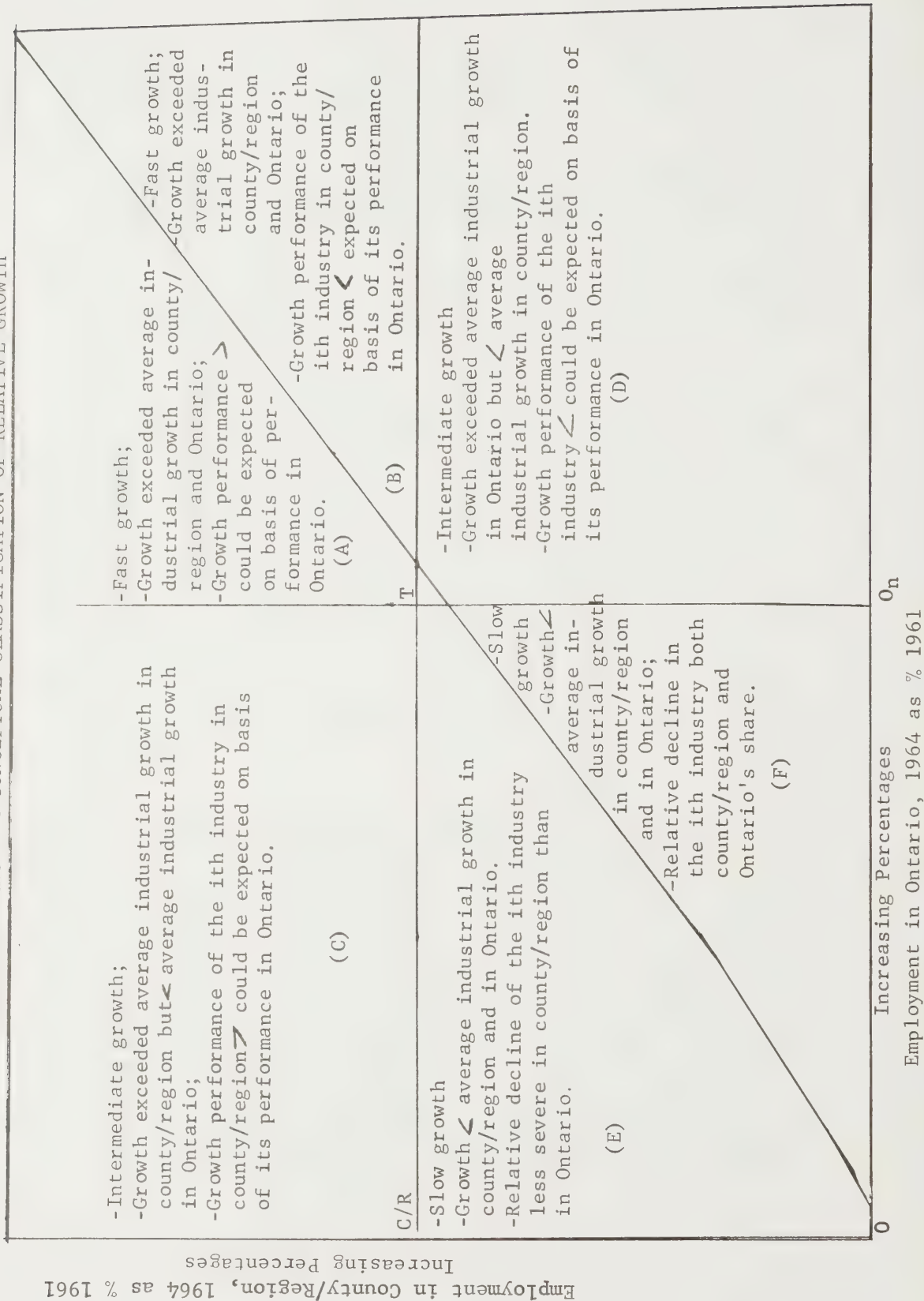
The research methodology adopted was the relative growth chart which was further refined into a conceptual classification of relative growth. It is important to note at this point that the device is essentially descriptive and does not identify causal relationships. It becomes meaningful only when embraced by a valid conceptual and theoretical framework. Additional judgement was made with information gathered from the Survey of Manufacturing especially with regard to input-output flows and factors underlying location of firms in the Region.

Figure 1 is a graphic representation of the relative growth chart with its conceptual design. The vertical axis measures employment (or some other unit of measurement) for each sub-regional and regional unit, at the end of the period of analysis (1964) as a percentage of employment at the beginning of the period (1961). Along the X axis, a similar percentage is recorded for (Ontario). On this axis O_n represents the same percentage for manufacturing as a whole as for the entire system. On the Y axis C/R represents a similar percentage for the regional or sub-regional unit under consideration. A diagonal drawn from the origin O, through the point T (whose coordinates are C/R, T and O_n , T respectively) has a slope equal to the ratio of the county or region's percentage share of employment of the total system in 1964 to the county or region's percentage share of provincial employment in 1961.

It should be pointed out here that the diagonal is not necessarily a 45° line. This case arises only when the growth of all manufacturing industries in the county or region is equivalent to the growth rate of all manufacturing industries in Ontario. Implicitly, the steeper the diagonal, the faster has been the growth of total industrial employment in the county or region compared to the Province's rate of growth. This relative

FIGURE D(3)

MANUFACTURING - A CONCEPTUAL CLASSIFICATION OF RELATIVE GROWTH



relationship can be measured by simply calculating the slope of the diagonal.

Within this framework, a scattergram of points representing the rate of growth of the i^{th} industry in the county or region against the rate of growth of the same industry in Ontario can be plotted. Thus a point located to the right of the projected O_n , T line suggests that industry is growing faster than the rate of all industries in Ontario--and vice versa. Again, a point located above the projected C/R, T line suggests that the rate of growth of this industry is faster than the rate of growth of all industries in the county or region. In composite form, then any point located within C/R, T, O_n , O (i.e. E and F sectors) suggests that that industry is growing at a much slower rate of growth than all industries in the county or region and Ontario. Again, a point in the A, B sectors reflects growth of the i^{th} industry as being faster than the rate of growth of all industries in the sub-regional and regional units and faster than the total of all industries in Ontario. Finally a point falling in sector C shows that industry is growing faster than the rate of growth of all industries in the county or region but less than the rate of growth of all manufacturing industries in the total system. And a point falling in D means that the rate of growth of that

industry is faster than the rate of growth of all industries in Ontario but less than that of all industries in the county or region.

The diagonal permits interesting comparisons, for any particular industry, of its growth in a given county or region relative to its growth in the total system. As such, an industry falling above the diagonal permits the conclusion that it fared better in the county or region than could have been expected on the basis of its performance in Ontario. On the other hand, a point located below the diagonal suggests that the growth performance of that industry in the county or region was less than the performance of that industry in the total system. Implicitly then, the diagonal allows one to conceive of the situation where a point lying above and to the left of the diagonal means that employment change for that industry (in the same time period) is greater than for the system as a whole. There may, therefore, be specific regional location cost advantages for that industry being located in that county or region rather than in any other. Again, when a point is below the diagonal the indication is that the performance of that industry in the county or region is worse than in the total industrial structure of the system in that its relative decline in the county or region was less than in the system as a whole.

One is able to develop a classification of relative growth of manufacturing industries which may be stated as (1) fast growth (2) intermediate and (3) slow growth industries and sub-classifications of each into (a) regional fast, intermediate and slow growth industries (b) provincial fast, intermediate and slow growth industries. Figure D(1) illustrates this classification into sectors with A, C, and E showing regional (or sub-regional) advantages. Also the parameters of each sector is shown in the figure.

2. The Data

Because of limitations on the availability of data by industrial groupings, employment figures were used to indicate changes in relative growth. Data were available from special tabulations of the Dominion Bureau of Statistics, but as many industrial groups are not reported on a county basis it was difficult to chart the growth performance. Moreover, it is difficult to distinguish whether the gaps which arose in the data refer to disclosure problems or to the non-existence of that particular industrial grouping in the respective counties. As a consequence, employment data were tabulated by county from other sources. These included the MODA Industrial Directory, Scott's Industrial Directory and the Industrial Directory of Municipal Data for Ontario

Municipalities. The employment data were tabulated for the years 1961, 1964 and 1968 and cross-checked with available DBS data to ensure accuracy and comparability.

3. Analysis - 1961-1964

The growth of total industrial employment in the counties and Region relative to the total system's rate of growth, is summarized in Table D(1) below. The steeper the slope (that is, the higher the value for the slope) the faster has been the rate of growth of total industrial employment in manufacturing, in the county or region, relative to Ontario. The detailed analysis of industrial groups in manufacturing within each regional and sub-regional unit which follows, should partially explain differences in growth rates.

TABLE D(1)

GROWTH OF TOTAL INDUSTRIAL EMPLOYMENT IN THE COUNTY
AND REGION RELATIVE TO ONTARIO'S RATE OF GROWTH 1961-1964

<u>Region/Sub-region</u>	<u>Slope</u>	<u>Rank</u>
Huron	0.950	3
Perth	1.1875	1
Waterloo	1.100	2
Wellington	.913	4
Midwestern Ontario Region	1.0625	

Source: Calculated from tabulations prepared by the Regional Development Branch.

The Midwestern Ontario Region In this Region, transportation equipment, the miscellaneous group, textiles and rubber industries have been classified as fast growth industries, with growth rates significantly above that of the total of all industries in the Region and Ontario.

These four industry groups show marked tendencies towards concentration. In 1964, Waterloo County had over 75 per cent of the total employees in the transportation equipment industries, 90 per cent of the employment in the rubber industries, over 84 per cent of the employees in textiles in the Region and over 65 per cent of the employment in the miscellaneous group.

No provincial fast growth industries in the Region emerged from the classification. However, tobacco, furniture and fixture, metal fabricating, machinery, electrical products and non-metallic mineral industrial groups were all categorized as intermediate growth industries whose pattern of growth performance in the Region did not closely approximate the performance of these industries in Ontario.

Intermediate growth industries with locational advantages in the Region have been classified as clothing, printing, publishing and allied industries, primary metals, petroleum and coal products and the chemical products groups.

The food and beverage group plus the leather industry are slow growth industries with some vestiges of regional locational advantages. The knitting mills, wood industries and paper and allied groups all show performances below that of the general growth of manufacturing as a whole, both in the Region and in the Province.

Waterloo County The growth patterns of manufacturing industry in Waterloo County conform closely to the general pattern in the Region. (Spearman's $r_s = .94$ implying that the ranked ordering of relative growth industries in Waterloo and the Midwestern Region was in almost perfect agreement.)

Regional fast growth industries are rubber, textiles and transportation equipment. The concentration of these industries in Waterloo has been alluded to above. The implication is that the economic health of these industrial groups in the Midwestern Region may very well hinge on developments in Waterloo County.

Provincial fast growth industries were classified as the metal fabricating group and electrical products industries. The growth performance of these industries in Waterloo County was less than could have been expected on the basis of their performance in Ontario.

Intermediate growth industries enjoying distinctive regional location economies are exactly the same in Waterloo County as they are in the Midwestern Region. Furniture and fixture industries, machinery, non-metallic minerals and the miscellaneous groups are classified as intermediate provincial growth industries, exceeding the average industrial growth in Ontario but less than the average industrial growth in Waterloo County. On the whole, these industrial groups performed better in the provincial system than they did in their sub-regional matrix.

Finally, the slow growth industries in Waterloo are again the same industries represented in the regional picture except that the leather industry performed much better in the Province than it did in the County.

Wellington County The pattern of growth in this County is not in keeping with the relative growth industries of either the Midwestern Region or Waterloo County (Spearman's $r_s = -.36$). Rubber, furniture and fixture industries, transportation equipment, the miscellaneous and non-metallic mineral industries are shown to be fast growth industries with growth performance in Wellington greater than could be expected on the basis of their performance in Ontario. The electrical products group, following the trend of the whole system, emerges in this sub-regional unit as a

provincial fast growth industry.

Intermediate growth industries showing some relative regional location cost advantages are food and beverage, knitting mills, wood industries, primary metals, petroleum and coal products and the chemical groups. Compared to Waterloo and the Region, the food processing and wood industries groups have shifted from the slow growth category to an intermediate growth position. The textiles, metal fabricating, and machinery industries are also intermediate growth industries but their performance in the county is slower than their overall performance in Ontario.

The slow growth industries in Wellington County are clothing, paper and allied industries (showing regional advantages) with rubber, leather and furniture and fixture industries performing slower in the County than in Ontario as a whole.

Perth County This county shows the highest relative rate of growth of manufacturing in the Region. Again, textiles, transportation equipment, machinery industries and the miscellaneous groups are, as in Midwestern Region and Waterloo, regional growth industries. The classification did not indicate the existence of any provincial fast growth industries.

The food and beverage, leather, clothing and chemical

groups are intermediate regional growth industries in Perth County. Intermediate growth industries showing growth performance much better in the total system than in the County are the same as in the Region, with the single addition of the rubber group.

The slow growth industrial mix in Perth is furniture and fixture (showing some regional growth advantages), knitting mills, wood industries, paper and allied industries and primary metals. The growth dynamic of all these industries except the furniture and fixture group conforms to the growth pattern of these industries in the Region i.e. their performance in the County and Region was much lower than could be expected from their performance in Ontario as a whole.

Huron County The industrial mix of Huron County is significantly different from all other regional and sub-regional units discussed above. The machinery and non-metallic minerals groups have growth performances much above the total of all industries in the county and also above the rates of growth of all industries in Ontario while at the same time exhibiting definitive regional locational advantages. The latter industry is highly resource-oriented, especially geared to the production of salt at Goderich.

Wood industries, printing and publishing and the chemical groups all demonstrate regional locational advantages at an

intermediate growth level. Furniture and fixtures, metal fabricating, transportation equipment, electrical products and the miscellaneous industries, emerge as intermediate growth industries in the Province. Their level of performance in the Midwestern Region is slower than in the Province generally.

Food and beverage industries, the leather group and primary metals are all considered slow growth industries with growth much slower than the county's overall performance in all industries and performing at a much lower level than are these industries in the total manufacturing system.

Some Spatial-Sectoral Patterns The following general spatial-sectoral patterns have emerged from this study of relative growth:

1. Transportation equipment, textiles and food processing industries all show distinctive regional locational advantages in the study area. The latter two seem to be attracted to low wage female labour. Food processing, of course, reflects the viable nature of the agricultural sector in the total economic structure of the Region. The relative growth dynamics of the transportation equipment industry seem to be strongly related to the growth of urbanization.

2. Wood processing industries, generally a slow growth industry in Ontario, shows regional intermediate growth patterns in Huron and Wellington Counties.
3. Chemical and chemical products industries fall into the intermediate relative growth category for the Region and all counties with a definite regional bias.
4. The metal groups of industries generally exhibit intermediate growth in the whole system, with primary metals and the machinery industries showing rapid growth characteristics with regional locational advantages. These industries seem to employ some inter-industry linkages (probably related to second stage processed raw material inputs). They also seem to change from a relative intermediate provincial growth pattern to one with a regional (or sub-regional) bias as the spatial unit takes off into self sustained growth.
5. The electrical products industry shows a consistent provincial pattern of growth - intermediate in Huron, Perth, and the Midwestern Region and rapid in Waterloo

and Wellington. The growth performance of this industry in the Region and counties of the study area is less than could be expected from its performance in the total Ontario system.

6. Printing, publishing and allied industries are consistently slow growth industries with a slight regional advantage in Wellington County.
7. Furniture and fixture industries in all counties and the Region are in the intermediate growth category, with a growth performance in the study area less than could be expected on the basis of its performance in Ontario.

4. Analysis - 1964 - 1968

The relative growth of industrial groupings in the Midwestern Region was also examined for the years 1964 to 1968.

The slope of the line in the 1964-1968 period was 1.1, indicating a slope that was steeper than for the previous period. The meaning is that the rate of growth of total industrial employment in manufacturing in the Midwestern Ontario Region was faster

than in the Province of Ontario generally, and also faster than that observed in the years 1961-1964.

The transportation equipment and textile groups were classified originally as regionally fast growing industries, that is, their growth rates in the 1961-1964 period were faster than the total of all industries in the Region and in Ontario. In the 1964-1968 period both industrial groupings had a fast rate of growth, but slower than their rate of growth in the Province generally. Although these industries were still concentrated in Waterloo County, they comprised a smaller percentage of Midwestern Ontario employment than was the case four years earlier.

Both the tobacco industry and knitting mills showed increased strength in the Midwestern Region. Their performance was greater than their rate of growth in the Province generally.

While the rate of growth of the clothing, chemical, printing, publishing and allied products industries exceeded the average industrial growth rate in the Midwestern Ontario Region between 1961 and 1964, the clothing and the printing, publishing and allied products groups had become slow growth industries by 1968 with respect to employment shares in both the Region and the Province. The chemical industry continued to grow but at a

rate slower than that in the Province generally.

Lastly, the paper and allied industries group was a slow growth industry in the 1961-1964 period. By 1968, this industry was growing faster than the average industrial growth rate in the Region as well as in the Province.

The other industrial groups had a rate of growth, relative to the Province, comparable to that experienced in the years 1961-1964.

APPENDIX E

FUNCTIONAL HIERARCHY OF CENTRES, MIDWESTERN ONTARIO REGION

APPENDIX E

A FUNCTIONAL HIERARCHY OF CENTRES IN THE MIDWESTERN ONTARIO REGION

It may be said that the city exists because it performs essential services for the surrounding territory. On the other hand, the surrounding area provides resources which are necessary for the existence of the central city. While the urban centre provides a focus for the production and distribution of goods and services, and serves as a centre of social and cultural communications, the surrounding suburbs and rural areas play a role in the economic vitality of the urban community. These outlying areas not only provide some of raw materials, basic foodstuffs and labour force necessary for the existence of the centre, but they also provide a major market for goods and services, and are recipients of the social and cultural communications which have their origin at the centre. In short, there is an interdependent relationship between the core and hinterland area.

It is a common observation, too, that there are fewer larger places than smaller ones in a region and that the largest centres provide a greater number and variety of goods and services than the smaller places. Combining the two observations interrelated dependency between the core and the hinterland in terms of the provisions of urban functions, and the hierarchical size organization of settlements, creates a fundamental spatial and functional organization of patterns of human activity.

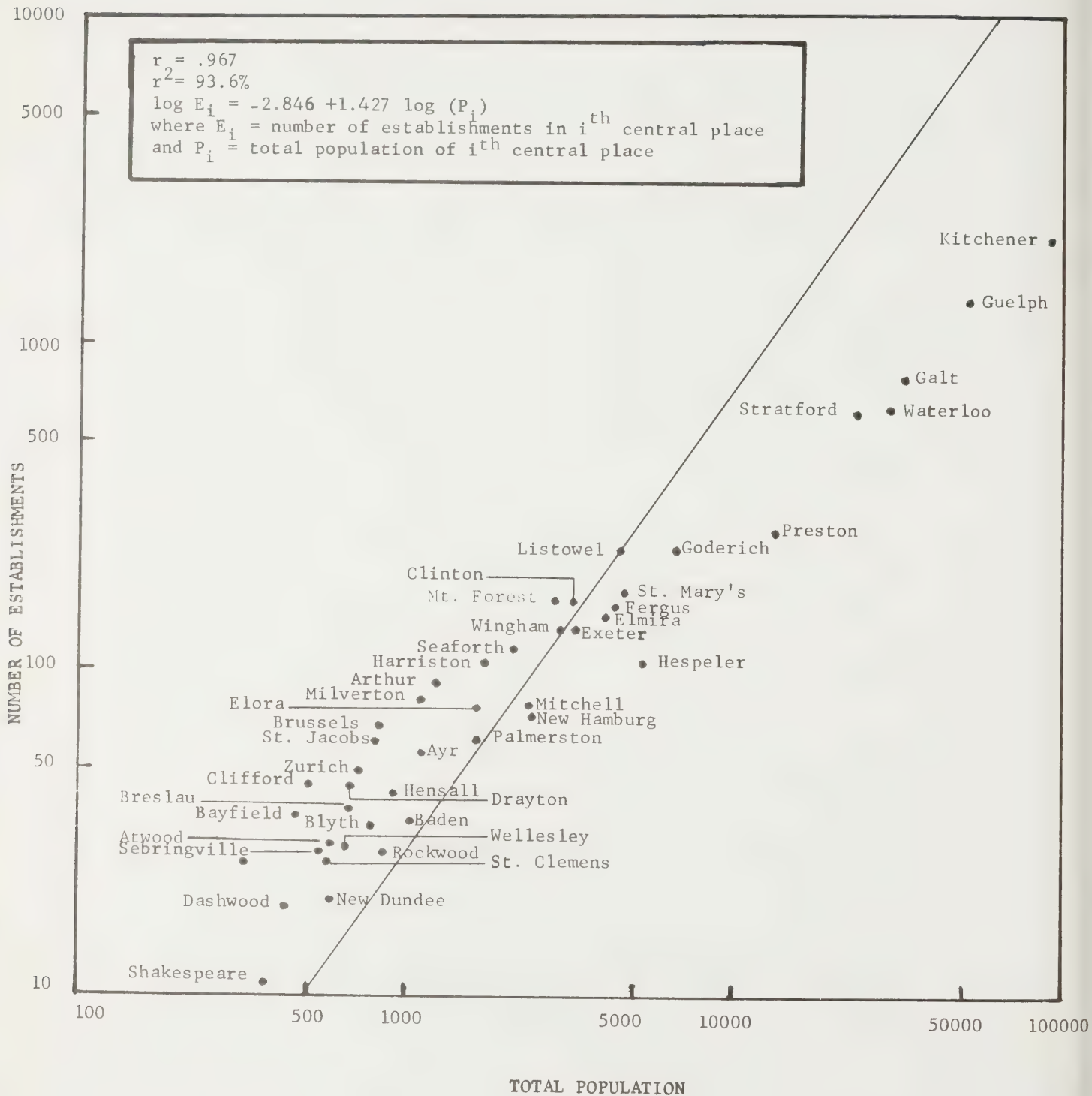
In sum then, the basic characteristic of settlement patterns is the arrangement of urban centres into a hierarchical array which reflects the varying capacities of centres to supply goods and services. Generally, a few large centres serve the specialized needs of people and businesses over large areas while many small centres serve the daily needs of local areas. The centres are sustained in their roles by the degree to which they are nodes for transportation routes. The urban nodes along with their transportation connections form the bases of the spatial dimension of economic development and are the foundation for what is sometimes called the regional space economy.¹

The method used to identify a functional hierarchy for the Midwestern Region was empirically satisfying to several scholars in the field.² The framework within which the analysis is undertaken is that of central place theory. This body of theory relates the service structure of settlements to the level of demand both within and surrounding settlements.

¹Hodge, G., The Identification of 'Growth Poles' in Eastern Ontario, A Report to the Ontario Department of Economics and Development, July 1966. p. 1

²One study of distinct relevance here is Thoman, R. S. and M. H. Yeates, Delimitation of Development Regions in Canada (with Special Reference to the Georgian Bay Vicinity). A Report submitted to A.D.A., Dept. of Industry, Ottawa. 1966, pp. 47 ff.

FIGURE E(1)



Three different models¹ are postulated to relate the service structure of settlements to their population size. The first model relates the population size of a central place (defined as a place which is the source of goods and services for an area larger than itself) to the number of establishments (defined as a service unit of any type such as a grocer, a barber shop, etc.) in a central place. Figure E (1) illustrates that there is a close positive relationship of a form:

$$\begin{aligned} \log E_i &= -2.846 + 1.427 \log (P_i) \\ \text{where } E_i &= \text{number of establishments in the } i\text{th central place} \\ \text{and } P_i &= \text{total population of the } i\text{th central place} \end{aligned}$$

The model explains 93.6% of the total variation in the data, significant at the 99% confidence level. The largest deviations concern the largest centres in the Region i.e., Guelph, Kitchener, Galt, Waterloo, Hespeler and Preston. Their relative positions on the graph suggest that these centres have a smaller number of retail and other business firms than their population can support, implicitly suggesting that growth in the number of establishments can take place. The larger than expected population of these centres may be explained by their geographical juxta-position in what is commonly known as the "Golden Triangle".

The second model expresses the relationship between size of central place and the number of functions (defined as the total number of different retail and business types found in central place).

¹Data for this analysis were obtained from direct field work and telephone directories, city directories and the 1968 Ontario Municipal Directory.

FIGURE E(2)

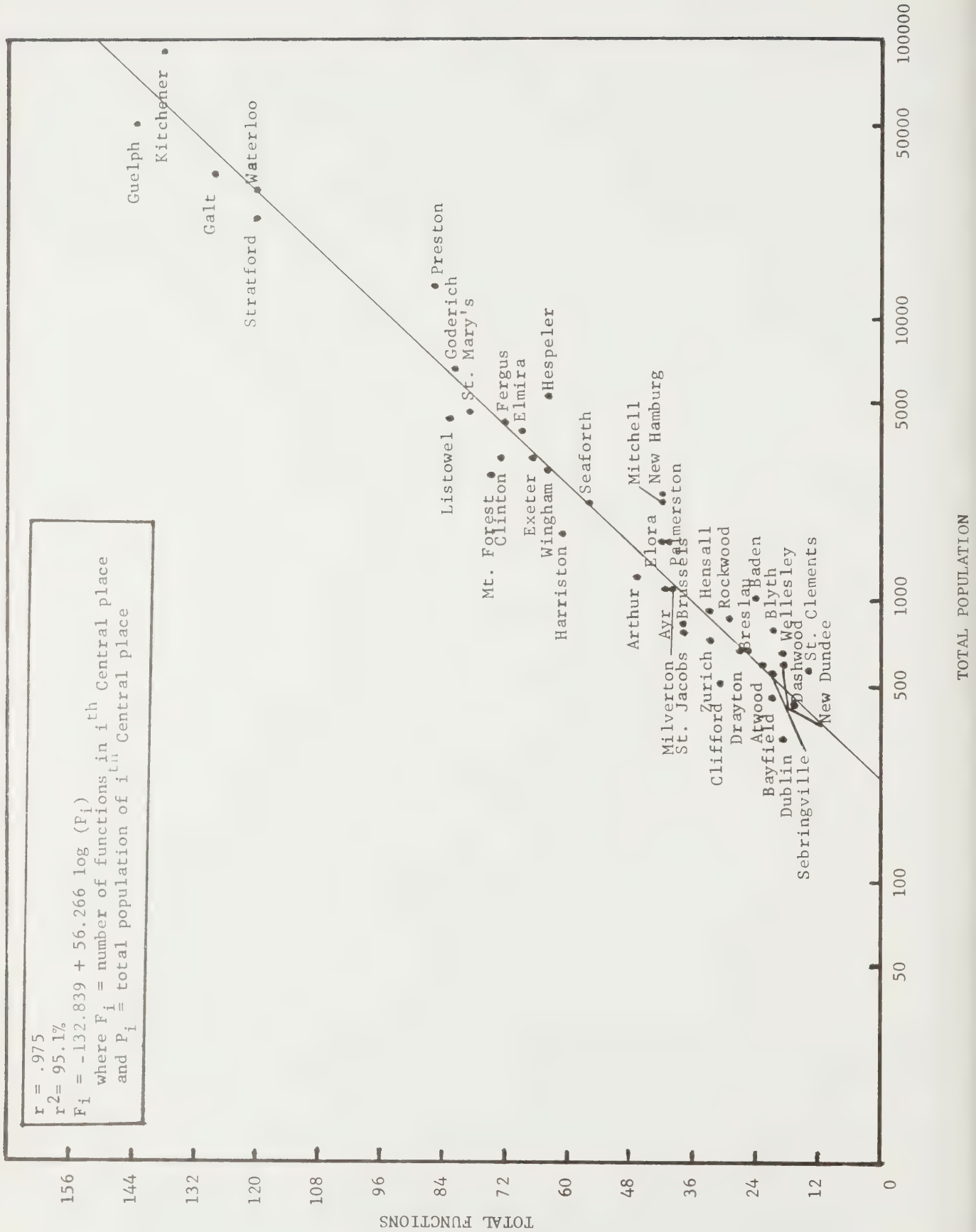


Figure (2) shows that a logarithmic transformation of the population variable presents a more linear relationship expressed as:

$$\begin{aligned} F_i &= -132.839 + 56.266 \log. (P_i) \\ \text{where } F_i &= \text{total number of functions in a central place} \\ &\text{and} \\ P_i &= \text{population of a central place.} \end{aligned}$$

The model explained 95.1 per cent of the relationship between number of functions and total population of central places. The solid black line at the centre of the cloud of points on the graph, suggests that the number of functions does increase with the population size of central place, but at a decreasing rate. For smaller centres, a positive change of population results in a greater proliferation of functions. This situation arises because there are very few functions that require large minimum population sizes (hence level of demand) to support them.

The third model builds on the two models presented above, postulating that there is some relationship between the number of establishments and the number of functions found in a central place. Figure E (3) suggests that the relationship is curvilinear and directly related in that the number of establishments in a central place increases at an increasing rate with the proliferation of functions. The parameters of the model can be expressed as:

$$\begin{aligned} \log E_i &= 1.1674 + .0142 F_i \\ \text{where } E_i &= \text{number of establishments in the } i\text{th central} \\ &\text{place, and} \\ F_i &= \text{number of functions in the } i\text{th central place} \end{aligned}$$

The fit of the model to the data is quite good, explaining 96.6% of the total variance. This last relationship is basic to a classification of centres in the Midwestern Region. The number of functions found in a central place is the key to the significance of that place in the service hierarchy inasmuch as it represents the range of services available.¹ The establishment variable is simply an index of size.

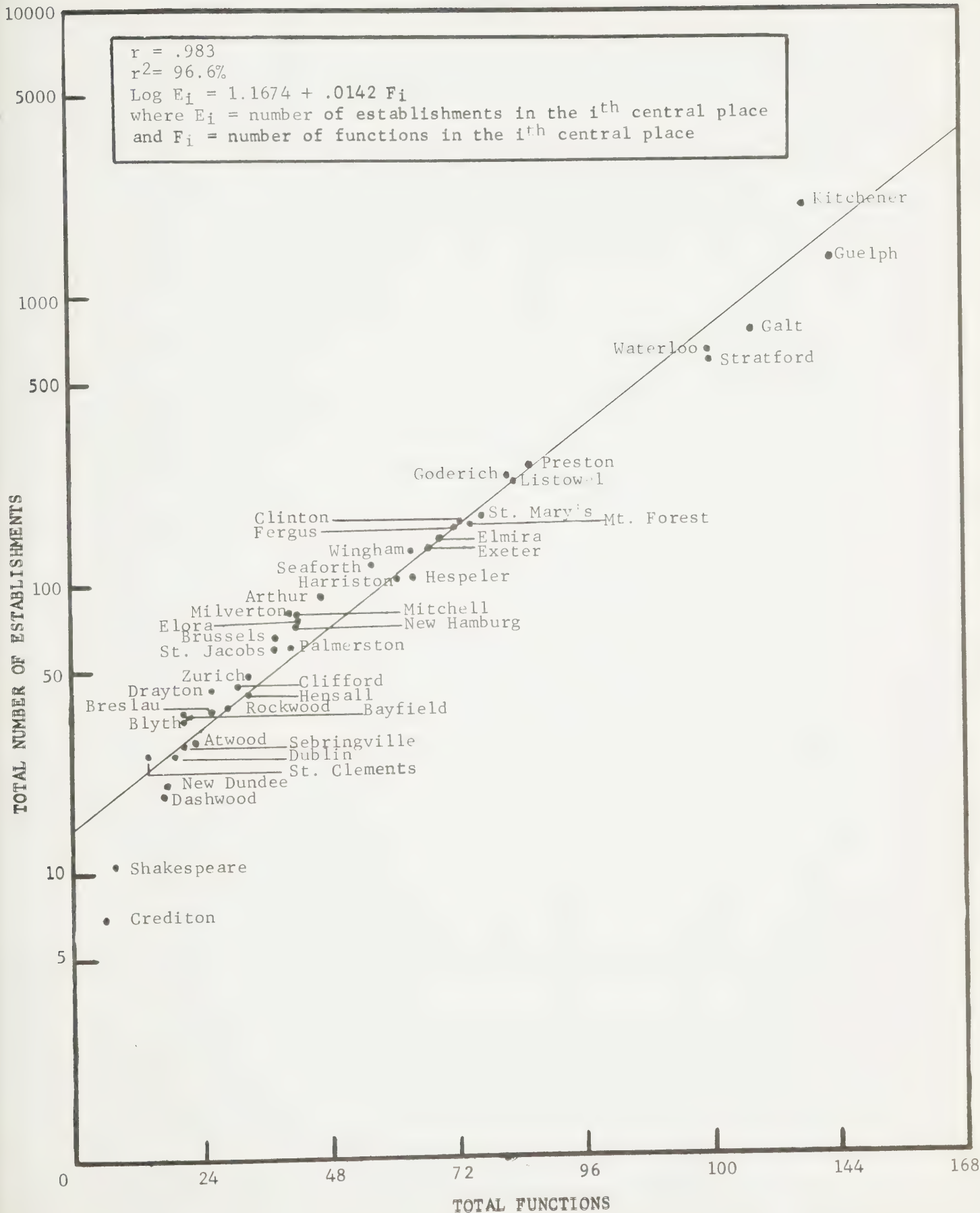
Some clustering of scattered points is evident. This can be regarded as a manifestation of the existence of an hierarchy. There seem to be four broad levels in the hierarchy. Even though the existence of a continuum is bound to be emphasized in such a graph, the hierarchical concept is implicitly spatial and consequently needs to be viewed as such.

Involved in the hierarchical concept, but isolated for emphasis is the assumption that there are many small central places providing functions which are in frequent demand and which serve limited areas, plus fewer, but larger, central places not only providing those services frequently demanded, but also those that are infrequently demanded and require larger service areas.

To translate this assumption into a spatial framework, one can reasonably use as a proxy for the definition of the trading area,

¹See Thoman, R. S. and M. H. Yeates, op. cit. p. 65 ff.

FIGURE E(3)



the journey-to-work zone. To the extent that the journey-to-work trip is longer than the normal shopping trip, we can use this variable to determine the maximum extent of the trading area.

Journey-to-work analysis in the Region (Chapter VII) demonstrated that the levels of commuter flow (and hence interaction) would justifiably allow the creation of three separate but not distinct urban entities for the "Golden Triangle" of centres in the Midwestern Region. Thus 1) Kitchener and Waterloo are incorporated into one centre, and 2) Galt-Preston-Hespeler into another. Guelph remains isolated as the third urban entity.

Urban places in the Midwestern Region are ranked in order of trade area population (See Table E (1)). From this ranking, we can assume that the larger the trade area population (hence the higher the rank) the higher the order of the centre in the hierarchy and concomitant to this, the larger the number and higher the level of functions which the centre performs. Thus trading area population adds a further dimension to the initial classification based on the function/establishment relationship. From this measure it would seem that Elmira and Fergus would move up in the hierarchy.

Having established some hierarchical levels of urban centres in the Midwestern Region it becomes necessary to look at the kinds of functions that each centre performed for its given trade area. For practical purposes, the following list of services was adopted to classify functions performed by urban centres in the Region.

Table E (1)

Trade Area Population, by Urban Centres,
Midwestern Region, 1966

<u>Urban Centre</u>	<u>Trade Area Population</u>	<u>Rank</u>
Kitchener-Waterloo	220,568	1
Guelph	98,772	2
Galt-Preston-Hespeler	85,048	3
Stratford	54,675	4
Elmira	23,992	5
Fergus	20,966	6
Goderich	20,628	7
New Hamburg	16,387	8
Listowel	13,882	9
St. Marys	12,149	10
Clinton	9,481	11
Seaforth	9,315	12
Exeter	9,274	13
Wingham	8,707	14
Mount Forest	8,601	15
Mitchell	8,228	16
Milverton	7,426	17
Palmerston	7,164	18
Elora	6,599	19
Harriston	6,169	20
Arthur	5,769	21
Ayr	5,665	22
Erin	5,268	23

Source: Field survey and D.B.S. census data tabulated by the
Regional Development Branch

- (a) Repair activities, etc.
- (b) Distribution, communications and transport:
 - (i) basic services (electricity, gas, water, etc.);
 - (ii) wholesale and retail trades etc.;
 - (iii) transport and communications.
- (c) Processing and distribution of information:
 - (i) banking;
 - (ii) administration
 - (iii) professional (business) service;
 - (iv) entertainment;
 - (v) market information;
 - (vi) education and research.
- (d) Attendance to various personal and collective needs:
 - (i) personal and collective security: defence, police, fire-fighting etc., insurance;
 - (ii) health and veterinary services;
 - (iii) other collective services;
 - (iv) miscellaneous personal services.

From this list, typical functions found at each of six functional levels in the hierarchy were determined. These are shown below:

<u>Functional Level</u>	<u>Typical Functions</u>
Type 1	International Airport Commuter trains, subways Financial district with stock exchange
Type 2	International Wholesaling Professional Sport Centre International Convention Centre
Type 3	News Dealers (Provincial, National, International) Universities Medical Schools - Specialized Services Wine Stores (Specialized food groups) Convention Facilities Brokers and Investors Regional Airports Wholesaling (Gasoline and Auto parts) Hydro Field Offices OHSC Field Offices Department of Education Field Offices Civic Orchestras
Type 4	Daily Newspapers Post-secondary Specialized Educational Facilities District Hospitals (OHSC Classification) Music Stores Art Galleries Trust Companies and Specialized Finance Provincial Courts O.P.P. District Headquarters Department of Welfare Field Offices Public Transit
Type 5	Weekly Newspapers Community Hospitals (OHSC Classification) Secondary Schools Clothing (Specialized Group) Drug Stores with Prescription Jewelry Shops Financial Lending Institutions e.g., H.F.C. Real Estate Agencies Insurance Branch Offices Lawyers Wholesaling (Groceries)

Type 6	Barber Shops
	Post Office
	Elementary Schools
	General Practitioners and Extended Care Service
	General Store
	Food Group
	Service Station
	Automotive and General Repair
	Community Centre (could be Church Facility)
	Commercial Bank

This list represents additional typical functions which a centre may perform. It suggests that each higher order type of centre performs all the functions of a lower order type. It is recognized too, that since service functions have differing demand thresholds (and so different market area size), people will travel further to utilize higher order functions. This suggests a spatial overlapping of trade areas into a nesting arrangement.

Consequently it means that centres located within the sphere of influence of a higher order centre will provide lower levels of functions than might be suggested by the size of their market areas and trading area population. Accessibility thus became a key to the provision of urban service activities and in areas where the transportation network limits interaction, we may find centres performing a higher order of functions than their trade area size would suggest.

APPENDIX F

RECOMMENDED PROGRAM FOR DEVELOPMENT, 1969 - 1973,
MIDWESTERN ONTARIO REGIONAL DEVELOPMENT COUNCIL,
- SUMMARY OF MAJOR NEEDS

APPENDIX F

RECOMMENDED PROGRAM FOR DEVELOPMENT, 1969 - 1973, MIDWESTERN ONTARIO REGIONAL DEVELOPMENT COUNCIL: SUMMARY OF MAJOR NEEDS

The following is a summary of the needs of the Region as contained in the Recommended Program for Development, 1969 - 1973, prepared for the Midwestern Ontario Region Development Council, by the Planning And Resources Institute, University of Waterloo. These recommendations formed part of the basis for our goal and objective analysis of Chapter VIII.

Agriculture

- need for a comprehensive approach to the needs and problems of the agricultural industry by both the Federal and Provincial Governments.
- need for a more astute marketing and the development of more and better market for agricultural products.
- need for a co-ordinated land development program in order to protect the best of the agricultural land from urban sprawl.
- need for larger holdings to provide economic farm units.
- need for controls in agricultural pollution.
- need to explain land costs in rural areas.
- need for a unified voice to represent farm interests, that is, a single effective farm organization.

- need for expanded and increased programs of financial assistance to farmers.
- need for management training to establish and maintain successful farm operations.

Commercial Fishing

- need for increased programs of lake fisheries research, control of lamprey-eel spawning areas, more vigorous control of pollution sources and re-stocking of Lake Huron.

Mineral Resources and Mining

- need for survey of sand and gravel deposits to attain an understanding of the Region's current reserves and future demands.
- need for controlled development of sand and gravel resources.
- need for controls on removal operations, waste disposal and reclamation to eliminate pollution and erosion.
- need to enforce regulatory by-laws which supervise quarrying operations and the removal of sand and gravel deposits.
- need to refine existing legislation or to introduce new provincial legislation regarding land use zoning.

Conservation

- need for a co-ordinating agency for the conservation movement.

- need for improved financing for conservation work.
- need to eliminate pollution of watercourses.
- need to reduce the depletion of forested areas and farm woodlots by legislation and incentives in order to reduce runoff, erosion and lowered water tables.

Recreation and Tourism

- need for planning to preserve and develop recreational and "natural area" resources.
- need for new and expanded open - space recreational areas.
- need for co-ordination of plans, policies and programs of the various government agencies.
- need to preserve the Lake Huron waterfront for public access and use.
- need to eliminate river and stream pollution in order to preserve sport fishing and recreational areas.
- need for professional recreational and planning leadership to develop tourist resources.
- need to improve highway access to recreational areas.
- need to make better public use of Puslinch Lake.

Medical, Legal, and Other Services

- need to eliminate the shortage of doctors and dentists.
- need to establish medical centres and clinics in small communities.
- need to increase veterinary services and personnel.

- need to improve farm equipment service facilities and replacement stocks.
- need to improve legal services and personnel.
- need to remove any inequities of law enforcement services.

Education

- need for extended programs of post-secondary, and technical education, especially in rural areas and smaller centres.
- need for long range planning in education.
- need to utilize school facilities as part of the community centre concept.
- need to standardize school construction policies to reduce cost.
- need to eliminate inequities in educational costs borne by farmers.
- need to relieve financial pressures on communities with higher educational institutions.
- need for better library services and new and improved branch libraries.
- need for standardization of texts and course content at the public school level.
- need to develop a major regional museum.

Housing

- need for communications and co-ordination between government levels to meet Region's housing needs.
- need to obtain data on housing needs, intensity and type.
- need to standardize existing by-laws and building codes.
- need to improve water and sewage services, especially in smaller communities.
- need to expedite provincial approval in subdivision and annexation proposals.
- need to expedite OMB approvals in subdivision and annexation proposals.
- need for municipalities to recognize the range of possibilities open to them to help meet their own housing needs.
- need to educate people on the nature and value on housing types such as multi-family, row housing, and low-cost subsidized housing.

Transportation

- need to provide the Region with comprehensive, integrated transportation system involving all modes of transport.
- need to improve highway connections to points within and beyond the Region.
- need for a clear understanding of the nature and extent of future involvement of the Federal Government in transportation as it could relate to the Province and the Region.

- need for improved communication and liaison between government levels in the Region and the Provincial Department of Highways.
- need for increased air services including some degree of air freight.
- need for the development of a regional port.

Utilities

- need to increase water supplies and to review potential sources of supply.
- need for additional financial support for introducing or expanding municipal water and sewage treatment systems.
- need for co-ordination in location of service corridors in order to consolidate future utility rights-of-way.

Industrial and Commercial Development

- need for greater equality of economic opportunity and income.
- need for comprehensive survey of the Region's municipalities, that is economic base studies that are uniform in nature for all municipalities concerned.
- need to examine alternative courses of action with regard to industrial and commercial development and to select the approach most desired by the Region.
- need for comprehensive and integrated planning for all economic development of the Region.

- need for elimination of industrial pollution.
- need for an effective co-ordinated approach to industrial promotion on a inter-municipal, county or region-wide scale.

Land Use Planning and Controls

- need for effective land use planning and controls to provide an integrated land use framework for economic development and to deal with the many problems that have evolved in the absence of proper planning at the local level.

Urban Centres

nearly all the needs discussed before confront each of the urban centres in the Region to some degree, with the greatest range and intensity found in the rapidly urbanizing core of Waterloo County.

- need for a concept or plan to guide and direct the physical and economic development of the entire four-county Region, especially the urban centres of Waterloo and South Wellington counties.
- need for more effective communication and co-ordination between municipal government and agencies, and the Province and its agencies.

APPENDIX G

MIDWESTERN ONTARIO REGIONAL ADVISORY BOARD REPORT - SUMMARY

APPENDIX G

MIDWESTERN REGIONAL ADVISORY BOARD REPORT

Itemized in this summary are situations that should be approached along with target dates.

- 1969 - demarcation of and proper organization of regional government areas.
- start of mandatory official plans and sub-division control by-laws and enforcement where not in effect.
- re-arrangement of various acts of legislature for efficient administration.
- establishment of controls and standards for pollution abatement.
- place all of Huron shore into a Conservation Authority.
- 1970 - commence erosion control program on Huron shore, control drain outlets.
- enlarge services to farmers re: fertilizers, sprays and pollution.
- initiate a stream acquisition/lease program to increase sport fishing in areas adjacent to Lake Huron.
- enlarge/acquire lake front holdings for public recreation.
- 1971 - regional government should be viable.
- in-depth assessment of previous programs.
- review of legislation for effectiveness.
- review of mandatory vs. permissive requirements and legislation.

- consider new or enlarged programs.
- 1972 - examine regional government structure for function.
- examine availability of services to people.
- examine enhancement of quality of life and environment.

A case in point is the Town of Listowel which has a lagoon sewage treatment system which sometimes malfunctions. Not all of the town is on this system. Five miles away is the village of Atwood. The village is a dormitory for Listowel and has a nucleus of retired people. They went there to escape the cost of such services as sewage and water. The use of drilled wells and septic tanks will one day be inadequate and proper sewage services will be needed and the installation, as a function of hindsight, will be expensive. One wonders if there are no parameters in this situation which would indicate where, in municipal development the more sophisticated services be included. The problem that occurs here is, if the information were available would any agency of government follow through? Permissive legislation would/will almost guarantee apathy.

Urban problems arise out of a lack of zoning and planning. Planning and zoning on a county wide basis should be mandatory. In accomplishing this an inventory would become available and land use would at last mean something.

Outside urban areas and in the agricultural community some issues seem out of joint. There are enough land use maps and

classifications in the area but what is needed is a process, either in law or taxation or both to inhibit the attrition of prime farm land to a burgeoning conurbation.

There is no substitution for peach orchards in the wheat-fields of Saskatchewan. The economists' argument that if carrots can be purchased more cheaply in California than in Ontario, then we should buy California carrots, loses validity if the Ontario carrot producer switches his production. There is wonder whether economists consider the practicality or theory.

The secondary problem in the agriculture sector is pollution. As farming becomes specialized and the concentration of stock in small areas increases, waste disposal is a problem. If put on the land, it upsets a nutrient balance in the soil and limits the kind of crop that can be produced. If spread in the winter time, it is washed into water courses. The downstream resident has a problem not of his making. Some farmers have constructed holding tanks and lagoons. There appears to be no adequate standard of what is required and no mandatory requirement that adequate measures be taken. It isn't enough that the Medical Officer of Health enters the scene only when a threat is aimed to humans.

Consideration should be given to requiring the farmer to obtain from a provincial agency, the specifications necessary for

adequate disposal of wastes (manure, carcasses, offal). The Province should establish the requirements. Research should be done on water potability for livestock. Stringent regulations and enforcement are required for weed and insect sprays and disposal of containers.

The farmer can produce pollutants but is also the recipient of pollutants. The fall out from industrial plants but more specifically portable hot mix plants will affect his pasture quality.

Another critical section in the Midwestern Region is the Huron shore. Recreation and zoning, when placed under any consideration shows some serious administrative weakness. Huron County has a long border on Lake Huron. The intrinsic value of this body of water is hardly available to many people. There are some parks but a ring of cottages one lot deep stands between the public and the water. Subdivision controls are non-existent. If there are any, (and these may be provincial), approval is given subject to certain provisions but who enforces the provisions? The municipalities, blind to these inadequacies, assume at a later date the cost of providing good roads and ditches.

In regards to Lake Huron, or for that matter any of the Great Lakes, it is presently incumbent on the Provincial Government to state publicly where a beach property ends and the public land commences. A case in point occurs at the west end of Highway 86 at Amberley where the township road terminates. Hundreds of car loads of

picknickers stop here on a Sunday and no one knows where public land stops and trespass begins. Who has responsibility vandalism, traffic control or maintenance of law and order? The simplicity of issuing a fiat is undoubtedly balanced by the magnitude of the reluctance of the Province to do so.

The Province is missing out on a quiet but burgeoning boom in sport fishing. The Bayfield, Eighteen Mile and Pine Rivers have a potential for good Rainbow fishing. Lands and Forests interests appears to be located in the area of the river between Highway 21 and Lake Huron. There should be a program where a larger portion of the rivers are open to public fishing and the remainder as a spawning refuge. It would require some supervision and the negotiation of rights from the land owners. While the fishing is important, what is more important is the investment made by anglers to obtain a piece of the action. The proof can be found in Michigan when Coho salmon were established in their waters and many depressed areas boomed. These rivers do not form any part of a Conservation Authority.

One blatant land abuse along the Huron shore is the occurrence of gullies. Regulation is needed to require the land owner to move his water from his terminal tile down to the lake in a pipe of channel. At present the terminal tile, up at the top of the bank, is undermined and drops off. The water cuts a channel and as more tiles drop off the channel becomes a gully.

Gully control is a legitimate conservation program but since some of these municipalities are not in a Conservation Authority, they are unable to participate in a program of control and/or rehabilitation.

Most of the problems cited are people problems and only people can solve them. One of the most obvious shortcomings of rural municipal administration is staff inadequacy. Many clerks are compelled by councils to work under some most peculiar conditions. Municipalities lose out on worthwhile programs and grants because of inability to cope with complex paper work.

If municipalities are to participate in a better life, it will be necessary to upgrade administration skills. There is no reason why provincial seminars cannot be held for these people or for that matter why should they not attend training courses at community colleges. This is an investment that would have a very significant return.

Alternately solve the problem by creating a regional government with qualified adequately paid staff.

APPENDIX H

INDICATORS OF PERFORMANCE, EVALUATION STAGE

INDICATORS OF PERFORMANCE, EVALUATION STAGE

POPULATION

Total Population
% change 1966/1951

Total Population
% change 1966/1961

Urban Population
% change 1966/1961

Rural Population
% change 1966/1961

Rural Farm Population
% change 1966/1961

Rural Non-Farm Population
% change 1966/1961

Population Density 1966

Population 20-64 years of age
% change 1966/1951

Population 65 years of age and over
% change 1966/1951

Total Population by Townships
% change 1966/1951

EDUCATION

Population 5 years of Age and Over (not attending school)
with 1-8 years of schooling
% change 1961/1951

Population 5 years of Age and Over (not attending school)
with 9-12 years of schooling
% change 1961/1951

EDUCATION (cont'd)

Population 5 years of Age and Over (not attending school)
with 13 + years of schooling
% change 1961/1951

LABOUR FORCE

Participation Rates
% change 1961/1951

Male Participation Rates
% change 1961/1951

Female Participation Rates
% change 1961/1951

Total Labour Force
% change 1961/1951

Labour Force in Primary Industries
% change 1961/1951

Labour Force in Manufacturing Industries
% change 1961/1951

Labour Force in Construction Industries
% change 1961/1951

Labour Force in Tertiary Industries
% change 1961/1951

INCOME

Average Personal Income
% change 1966/1961

Average Household Income
% change 1966/1961

Proportion of Households with Incomes of Less than \$3,000
% change 1966/1961

Proportion of Households with Incomes of \$10,000 and Over.
% change 1966/1961

AGRICULTURE

Total Number of Farms
% change 1966/1951

Total Farm Area
% change 1966/1951

Total Farm Cash Receipts
% change 1966/1951

Farm Capital Value
% change 1966/1951

Value of Land and Buildings
% change 1966/1951

Value of Land and Buildings per acre
% change 1966/1951

Value of Machinery and Equipment
% change 1966/1951

Value of Livestock and Poultry
% change 1966/1951

Total Number of Commercial Farms
% change 1966/1961

Number of Commercial Farms with Cash Receipts \$2,500 - \$9,999,
% change 1966/1961

Number of Commercial Farms with Cash Receipts \$10,000 and over,
% change 1966/1961

MINING

Total Value of Production
% change 1966/1961

MANUFACTURING

Total Employment in Manufacturing
% change 1964/1961

Total Value Added in Manufacturing
% change 1964/1961

MANUFACTURING (cont'd)

Value Added in Manufacturing per Employee
% change 1964/1961

CONSTRUCTION

Total Value of Building Permits Issued
% change 1966/1961

Total Value of Building Permits Issued Per Capita
% change 1966/1961

Total Value of Building Permits Issued
% change 1966/1957

Value of Building Permits Issued for Residential Construction
% change 1966/1957

Value of Building Permits Issued for Industrial Construction
% change 1966/1957

Value of Building Permits Issued for Commercial Construction
% change 1966/1957

Value of Building Permits Issued for Institutional and
Governmental Construction
% change 1966/1957

RETAIL TRADE

Total Value of Retail Trade
% change 1966/1951

Per Capita Value of Retail Trade
% change 1966/1951

Number of Stores in Retail Trade
% change 1966/1951

Number of Employees in Retail Trade
% change 1961/1951

WHOLESALE TRADE

Total Value of Receipts in Wholesale Trade
% change 1961/1951

Per Capita Value of Receipts in Wholesale Trade
% change 1961/1951

Number of Locations in Wholesale Trade
% change 1961/1951

Number of Employees in Wholesale Trade
% change 1961/1951

SERVICE TRADES

Total Value of Receipts in Service Trades
% change 1961/1951

Per Capita Value of Receipts in Service Trades
% change 1961/1951

Number of Locations in Service Trades
% change 1961/1951

Number of Employees in Service Trades
% change 1961/1951

ABSOLUTE CHANGE

Total Population 1966/1951

Urban Population 1966/1961

Average Personal Income 1966/1961

Retail Sales per Capita 1966/1951

APPENDIX I

SAMPLE DESIGN FOR SURVEY OF MANUFACTURING

APPENDIX I

THE SAMPLE DESIGN

The sampling procedure sought to achieve two objectives: First, that a statistically significant proportion of total manufacturing employees be sampled for each major centre, and second, that the sample be representative for all major SIC groups.

Before field work was undertaken, manufacturing firms were selected from MODA and Scott's Directories 1968,¹ by size of employment until the sample cumulatively accounted for at least 50 per cent of total employment of the Study Area. The sample was further rationalized by centre location and stratified by SIC groups at location to ensure proportional coverage. Table I (1) summarizes the sample design for the whole Region. It should be mentioned, that field work was undertaken in two stages - August/September 1969 and January 1970. The first stage involved Huron and Perth counties and the second stage covered Waterloo and Wellington counties. In the first survey, the proportion of total employment sampled was 70.3 per cent, and this included 54 out of 247 firms. For the Waterloo and Wellington survey, the sampled employment was 50.1 per cent of the total employment in these two counties, which included 81

¹MODA Industrial Directory, 1968 and Scott's Industrial Directory, 1968. Actually data in both Directories refer to 1967 figures.

Table I

THE SAMPLE DESIGN: A COMPARISON OF SAMPLE EMPLOYMENT
WITH TOTAL REGIONAL EMPLOYMENT, BY SIC GROUPS, THE MIDWESTERN REGION, 1968

SIC	SIC Description	Total Number Of Manufacturing Firms	Total Number Of Firms Sampled	Number Of Firms Sampled As A % Of Total	Total Employment In MODA By SIC Groups	Total Employment For Firms Sampled	Sampled Employment As % Of Total Employment
10 - 14	Food & Beverage Industry Group	195	18	9.2	7,369	5,132	69.6
15 - 24	Textiles, Knitting, Clothing & Leather Industry Groups	121	26	21.5	14,107	5,683	40.3
25 - 28	Wood, Furniture, Paper & Allied Printing Industry Groups	218	21	9.6	7,241	3,104	42.9
29 - 31	Primary Metal & Fabricated Metals Industry Groups	303	23	7.6	18,023	7,086	39.3
32	Transportation & Allied Equipment Industry Group	47	10	21.3	5,364	2,357	43.9
	Electrical Products Industry Group	44	11	25.0	6,918	5,752	83.1
16 - 37	Chemical and Rubber Industry Groups	38	11	28.9	7,172	6,121	85.3
15, 34, 35, 36, 38, 39	Miscellaneous Industry Groups	126	15	11.9	5,065	2,024	40.0
All Industry Groups		1,092	135	12.4	71,259	37,259	52.7

Note: The groupings listed on this table involved some aggregation of SIC groups listed in the manual. This procedure resulted from the fact that the D.B.S. disclosure rule prevents the publication of survey results of SIC groups with fewer than three establishments or three or more if these are dominated by one or two establishments or companies. The rule of thumb adopted was to aggregate groups where a noticeable linkage was involved. In most cases the aggregation occurred with groups with a significant commonality of manufactured inputs.

Source: Field survey, 1969, 1970. MODA Industrial Director, 1968. Scotts Industrial Directory, 1968.

out of 845 firms.

From Table I (1), it can be noted that a statistically significant sampling proportion was obtained in terms of both SIC groups and employment (52.7 per cent). For MODA as a whole, 12.4 per cent of the firms were sampled. Variations occurred with SIC groups 10 - 14, 25 - 28 and 29 - 31, but the employment sampled for these categories was still statistically significant. The degree of industrial concentration can be derived from this table - e.g. for the food and beverage industry groups, 9.2 per cent of all firms generated 96.6 per cent of total employment in that category while 21.3 per cent of the transportation equipment group accounted for approximately 44 per cent of all employment in that category.

It must be noted too, that the aggregation of SIC groups used in the analysis are the result of the confidentiality ruling.¹ SIC groups were aggregated where a noticeable linkage in terms of manufacturing inputs was involved. Appendix A contains a sample of the questionnaire used in the survey of manufacturers.

¹In practice, this means that no data except for number, type and location of establishments are shown for industrial or geographic aggregations composed of fewer than three establishments, or of three or more if these are dominated by one or two establishments, or of three or more if these are dominated by one or two establishments or companies.

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APPENDIX- J

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TABLE 1.

POPULATION DISTRIBUTION BY AGE GROUPS, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

		TOTAL			0-4			5-14						
		1951		1966	NUMBER		% CHANGE		NUMBER		% CHANGE			
		(1)	(2)	(3)	1951 (4)	1961 (5)	1966 (6)	1966/1951 (7)	1966/1961 (8)	1951 (9)	1961 (10)	1966 (11)	1966/1951 (12)	1966/1961 (13)
HURON	No.	49,280	53,805	54,446	5,798	6,191	5,521	-4.8	-10.8	8,063	11,435	11,670	44.7	2.1
	%	100.0	100.0	100.0	11.8	11.5	10.1			16.3	21.3	21.4		
PERTH	No.	52,584	57,452	60,424	5,727	6,248	6,236	8.9	-0.2	8,408	11,768	12,598	49.8	7.1
	%	100.0	100.0	100.0	10.9	10.9	10.3			16.0	20.5	20.9		
WATERLOO	No.	126,123	176,754	216,728	14,405	21,109	24,693	71.4	17.0	18,940	36,188	44,845	136.8	23.9
	%	100.0	100.0	100.0	11.4	11.9	11.4			15.0	20.5	20.7		
WELLINGTON	No.	66,930	84,702	94,177	7,362	9,880	10,181	38.3	3.0	10,598	17,562	20,188	90.5	15.0
	%	100.0	100.0	100.0	11.0	11.7	10.8			15.8	20.7	21.4		
TOTAL, MIDWESTERN ONTARIO REGION	No.	294,917	372,713	425,775	33,292	43,428	46,631	40.1	7.4	46,009	76,953	89,301	94.1	16.0
	%	100.0	100.0	100.0	11.3	11.7	11.0			15.6	20.6	21.0		
TOTAL, PROVINCE OF ONTARIO	No.	4,597,542	6,236,092	6,960,870	514,722	740,193	745,744	44.9	0.7	724,592	1,267,556	1,458,331	101.3	15.1
	%	100.0	100.0	100.0	11.2	11.9	10.7			15.8	20.3	21.0		

TABLE 1.

POPULATION DISTRIBUTION BY AGE GROUPS, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966 (Cont'd.)

	45-64						65 AND OVER					
	NUMBER			% CHANGE			NUMBER			% CHANGE		
	1951 (29)	1961 (30)	1966 (31)	1966/1951 (32)	1966/1961 (33)		1951 (34)	1961 (35)	1966 (36)	1966/1951 (37)	1966/1961 (38)	
HURON	No. 9,198 18.7	10,046 18.7	10,657 19.6	15.9	6.1		6,210 12.6	6,159 11.4	6,321 11.6	1.8	2.6	
PERTH	No. 11,081 21.1	11,511 20.0	11,989 19.8	8.2	4.2		6,380 12.1	6,754 11.7	6,864 11.4	7.6	1.6	
WATERLOO	No. 24,479 19.4	32,006 18.1	37,253 17.2	52.2	16.4		10,569 8.4	13,806 7.8	16,136 7.4	52.7	16.9	
WELLINGTON	No. 13,535 20.2	16,019 18.9	17,323 18.4	28.0	8.1		7,257 10.9	8,502 10.0	9,409 10.0	29.7	10.7	
TOTAL, MIDWESTERN ONTARIO REGION	No. 58,293 19.8	69,582 18.7	77,222 18.1	32.5	11.0		30,416 10.3	35,221 9.4	38,730 9.1	27.3	10.0	
TOTAL, PROVINCE OF ONTARIO	No. 908,399 19.7	1,147,382 18.4	1,281,838 18.4	41.1	11.7		400,363 8.7	508,073 8.1	567,722 8.1	41.8	11.7	

TABLE 1.

POPULATION DISTRIBUTION BY AGE GROUPS, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966 (Cont'd.)

		15-19				20-24				25-44						
		NUMBER		% CHANGE		NUMBER		% CHANGE		NUMBER		% CHANGE				
		1951 (14)	1961 (15)	1966 (16)	1966/1951 (17)	1966/1961 (18)	1951 (19)	1961 (20)	1966 (21)	1966/1951 (22)	1966/1961 (23)	1951 (24)	1961 (25)	1966 (26)	1966/1951 (27)	1966/1961 (28)
HURON	No.	1,837	4,479	5,408	55.3	20.7	3,571	3,177	3,346	-6.3	5.3	12,957	12,318	11,523	-11.1	-6.5
	%	7.1	8.3	9.9			7.2	5.9	6.2			26.3	22.9	21.2		
PERTH	No.	3,502	4,290	5,523	57.7	28.7	3,661	3,254	3,821	4.4	17.4	13,825	13,627	13,393	-3.1	-1.7
	%	6.6	7.5	9.1			7.0	5.7	6.3			26.3	23.7	22.2		
WATERLOO	No.	8,829	12,689	19,257	118.1	51.8	10,671	11,345	17,676	65.6	55.8	38,230	49,611	56,868	48.8	14.6
	%	7.0	7.2	8.9			8.5	6.4	8.2			30.3	28.1	26.2		
WELLINGTON	No.	5,111	6,641	8,626	68.8	29.9	5,127	4,883	6,368	24.2	30.4	17,940	21,215	22,082	23.1	4.1
	%	7.6	7.8	9.2			7.7	5.8	6.8			26.8	25.1	23.4		
TOTAL, MIDWESTERN ONTARIO REGION	No.	20,925	28,099	38,814	85.5	38.1	23,030	22,659	31,211	35.5	37.7	82,952	96,771	103,866	25.2	7.3
	%	7.1	7.5	9.1			7.8	6.1	7.3			28.1	26.0	24.4		
TOTAL, PROVINCE OF ONTARIO	No.	315,685	436,883	599,197	89.8	37.2	352,360	386,966	485,053	37.7	25.3	1,381,421	1,749,039	1,822,985	32.0	4.2
	%	6.9	7.0	8.6			7.7	6.2	7.0			30.0	28.1	26.2		

TABLE 1.a

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, HERON COUNTY, 1951, 1961 AND 1966

		TOTAL			NUMBER			0-4			5-14			
		1951 (1)	1961 (2)	1966 (3)	1951 (4)	1961 (5)	1966 (6)	% CHANGE 1966/1951 (7)	1966/1961 (8)	1951 (9)	1961 (10)	1966 (11)	% CHANGE 1966/1951 (12)	1966/1961 (13)
TOWNS	No.													
Clinton	2,547	3,491	3,280	334	473	320	-4.2	-32.3	345	609	648	87.8	6.4	
	100.0	100.0	100.0	13.1	13.6	9.7	-12.2	-7.4	13.5	17.4	19.8	70.8	-4.6	
Exeter	2,547	3,047	3,226	343	325	301	-12.2	-7.4	318	569	543	70.8	-4.6	
	100.0	100.0	100.0	13.5	10.7	9.3	-12.2	-7.4	12.5	18.7	16.8	64.9	-0.3	
Goderich	4,934	6,411	6,710	541	674	662	22.4	-1.8	754	1,247	1,243	64.9	-0.3	
	100.0	100.0	100.0	11.0	10.5	9.9	-23.0	-8.6	15.3	19.4	18.5	29.6	-12.9	
Seaforth	2,118	2,255	2,241	248	209	191	-23.0	-8.6	301	448	390	29.6	-12.9	
	100.0	100.0	100.0	11.7	9.3	8.5	-23.0	-8.6	14.2	19.9	17.4	29.6	-12.9	
Wingham	2,642	2,922	2,974	321	298	259	-19.3	-13.1	351	565	570	62.4	0.9	
	100.0	100.0	100.0	12.1	10.2	8.7	-19.3	-13.1	13.3	19.3	19.2	62.4	0.9	
VILLAGES	No.													
Bayfield	-	-	464	-	-	40	-	-	-	-	65	-	-	
	100.0	100.0	100.0	-	-	8.6	-	-	-	-	14.0	-	-	
Blyth	665	724	799	58	71	81	39.7	14.1	104	126	167	60.6	32.5	
	100.0	100.0	100.0	8.7	9.8	10.1	19.3	-2.9	15.6	17.4	20.9	4.6	4.6	
Brussels	813	844	820	57	70	68	19.3	-2.9	131	131	137	4.6	4.6	
	100.0	100.0	100.0	7.0	8.3	8.3	37.3	10.8	16.1	15.5	16.7	65.5	-3.2	
Hensall	713	926	934	75	93	103	10.8	15.4	110	188	182	65.5	-3.2	
	100.0	100.0	100.0	10.5	10.1	11.0	-11.3	15.4	15.4	20.3	19.5	-	-	
Zurich	-	723	737	-	80	71	-	-11.3	-	141	153	-	8.5	
	100.0	100.0	100.0	-	11.1	9.6	-	-11.3	-	19.5	20.8	-	8.5	
TOWNSHIPS	No.													
Ashfield	1,704	1,688	1,646	201	226	200	-0.5	-11.5	290	401	425	46.6	6.0	
	100.0	100.0	100.0	11.8	13.4	12.2	-11.5	-11.5	17.0	23.8	25.8	46.6	6.0	
Colborne	1,136	1,233	1,257	118	129	149	26.3	15.5	220	272	286	30.0	5.1	
	100.0	100.0	100.0	10.4	10.5	11.8	-	-8.0	19.4	22.1	22.7	57.5	11.0	
Goderich	1,608	1,824	2,158	195	212	195	-	-8.0	315	447	496	57.5	11.0	
	100.0	100.0	100.0	12.1	11.6	9.0	-14.2	-4.1	19.6	24.5	23.0	10.5	5.6	
Grey	1,967	1,909	1,827	192	226	194	1.0	-14.2	392	410	433	10.5	5.6	
	100.0	100.0	100.0	9.7	11.8	10.6	-27.0	-4.1	19.9	21.5	23.7	1.3	-7.2	
Hay	2,641	2,002	1,929	319	243	233	-27.0	-4.1	470	513	476	1.3	-7.2	
	100.0	100.0	100.0	12.1	12.1	12.1	-	-6.3	17.8	25.6	24.7	19.5	9.7	
Howick	2,859	2,758	2,811	270	288	270	-	-6.3	539	587	644	19.5	9.7	
	100.0	100.0	100.0	9.5	10.4	9.6	-13.1	-19.0	18.9	21.3	22.9	13.9	-9.6	
Hullett	1,855	1,953	1,841	221	237	192	-13.1	-19.0	373	470	425	13.9	-9.6	
	100.0	100.0	100.0	11.9	12.1	10.4	-22.8	-11.2	20.1	24.1	23.1	11.1	-1.5	
McKillop	1,718	1,610	1,569	215	187	166	-22.8	-11.2	350	395	389	11.1	-1.5	
	100.0	100.0	100.0	12.5	11.6	10.6	-29.8	-23.4	20.4	24.5	24.8	13.9	8.3	
Morris	1,675	1,585	1,520	191	175	134	-29.8	-23.4	310	326	353	13.9	8.3	
	100.0	100.0	100.0	11.4	11.0	8.8	-29.9	-26.7	18.5	20.6	23.2	-7.0	-25.9	
Stanley	1,950	2,836	1,536	231	221	162	-29.9	-26.7	359	451	334	-7.0	-25.9	
	100.0	100.0	100.0	11.8	7.8	10.5	-15.9	-20.5	18.4	15.9	21.7	78.1	5.8	
Stephen	4,561	4,545	4,877	660	698	555	-15.9	-20.5	659	797	878	78.1	5.8	
	100.0	100.0	100.0	14.5	15.4	11.4	-15.9	-20.5	24.4	24.4	1,174	109.0	10.2	
Tuckersmith	3,280	3,217	4,042	362	473	415	14.6	-12.3	420	797	878	109.0	10.2	
	100.0	100.0	100.0	11.1	14.7	10.3	-18.0	-10.5	12.8	24.8	21.7	26.3	-4.3	
Turnberry	1,381	1,406	1,381	167	153	137	-18.0	-10.5	247	326	312	26.3	-4.3	
	100.0	100.0	100.0	12.1	10.9	9.9	-15.0	-5.2	17.9	23.2	22.6	17.5	5.3	
Usborne	1,667	1,552	1,538	193	173	164	-15.0	-5.2	302	337	355	17.5	5.3	
	100.0	100.0	100.0	11.6	11.1	10.6	-6.8	-3.5	18.1	21.7	23.1	53.6	-0.3	
Wawanosh, East	1,109	1,167	1,138	147	142	137	-6.8	-3.5	196	302	301	53.6	-0.3	
	100.0	100.0	100.0	13.3	12.2	12.0	-12.2	6.1	17.7	25.9	26.5	40.6	9.0	
Wawanosh, West	1,190	1,177	1,191	139	115	122	-12.2	6.1	207	267	291	40.6	9.0	
	100.0	100.0	100.0	11.7	9.8	10.2	-12.2	6.1	17.4	22.7	24.4	40.6	9.0	
TOTAL, HERON COUNTY	No.													
	49,280	53,805	54,446	5,798	6,191	5,521	-4.8	-10.8	8,063	11,435	11,670	44.7	2.1	
	100.0	100.0	100.0	11.8	11.5	10.1	-10.8	-10.8	16.3	21.3	21.4	44.7	2.1	

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 23, (1951), Bulletin SP-1, (92-525), (1961), and Bulletin S-2, (92-632), (1966).

TABLE 1. a

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, HURON COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		15-19					20-24					25-44				
		NUMBER		% CHANGE			NUMBER		% CHANGE			NUMBER		% CHANGE		
		1951 (13)	1961 (15)	1966 (16)	1966/1951 (17)	1966/1961 (18)	1951 (19)	1961 (20)	1966 (21)	1966/1951 (22)	1966/1961 (23)	1951 (24)	1961 (25)	1966 (26)	1966/1951 (27)	1966/1961 (28)
TOWNS																
Clinton	No.	109	244	272	149.5	11.5	181	311	235	29.8	-24.4	753	841	721	-4.2	-14.3
		4.3	7.0	8.3			7.1	8.9	7.2			29.6	24.1	22.0		
Exeter	No.	106	187	279	163.2	49.2	174	189	211	21.3	11.6	797	774	698	-12.4	-9.8
		4.1	6.1	8.7			6.8	6.2	6.6			31.3	25.4	21.6		
Goderich	No.	294	466	573	94.9	22.4	308	344	429	39.3	24.7	1,321	1,539	1,478	11.9	-4.0
		5.9	7.3	8.6			6.2	5.4	6.4			26.8	24.0	22.0		
Seaforth	No.	122	184	219	79.5	19.0	132	105	128	-3.0	21.9	349	447	392	-28.6	-12.3
		5.8	8.2	9.8			6.2	4.6	5.7			25.9	19.8	17.5		
Wingham	No.	190	260	291	53.2	11.9	205	187	197	-3.9	5.3	677	630	612	-9.6	-2.9
		7.2	8.9	9.8			7.8	6.4	6.6			25.6	21.6	20.6		
VILLAGES																
Bayfield	No.	-	-	41	-	-	-	-	16	-	-	-	-	83	-	-
		-	-	8.8			28	37	43	53.6	16.2	167	137	179		
Blyth	No.	40	50	44	10.0	-12.0	4.2	5.1	5.4			25.1	18.9	15.8	-5.4	15.3
		6.0	6.9	5.5			4.7	5.3	5.1	8.5	-3.8	178	160	19.8		
Brussels	No.	49	55	51	4.1	-7.3	5.8	6.3	6.2			21.9	19.0	16.6	-18.0	-8.8
		6.0	6.5	6.2			5.8	5.4	6.4	93.9	18.5	164	177	17.8		
Hensall	No.	31	66	78	151.6	18.2	33	54	64			23.0	198	177	7.9	-10.6
		4.4	7.1	8.3			4.6	5.8	6.9			21.4	133	18.9		
Zurich	No.	-	60	57	-	-5.0	-	39	51	-	30.8	-	124	124	-	-6.8
		-	8.3	7.8			-	5.4	6.9			-	18.4	16.8		
TOWNSHIPS																
Ashfield	No.	129	124	143	10.9	15.3	100	90	69	-31.0	-23.3	428	366	338	-21.0	-7.7
		7.6	7.3	8.7			5.9	5.3	4.2			25.1	21.7	20.5		
Colborne	No.	87	106	114	31.0	7.5	65	70	84	29.2	20.0	291	273	256	-12.0	-6.2
		7.7	8.6	9.1			5.7	5.7	6.7			25.6	22.1	20.4		
Goderich	No.	90	175	209	132.2	19.4	99	84	120	21.2	42.9	438	419	492	12.3	17.4
		5.6	9.6	9.7			6.2	4.6	5.6			27.2	23.0	22.8		
Grey	No.	151	172	163	7.9	-5.2	123	91	95	-22.8	4.4	453	429	367	-19.0	-14.5
		7.7	9.0	8.9			6.3	4.8	5.2			23.0	22.5	20.1		
Hay	No.	200	171	176	-12.0	2.9	175	101	101	-42.3	-	661	450	413	-37.5	-8.2
		7.6	8.6	9.1			6.6	5.0	5.2			25.0	22.5	21.4		
Howick	No.	206	207	243	18.0	17.4	164	127	123	-25.0	-3.1	692	598	575	-16.9	-3.8
		7.2	7.5	8.6			5.7	4.6	4.4			24.2	21.7	20.5		
Hullett	No.	119	164	211	77.3	28.7	92	87	108	17.4	24.1	422	403	347	-17.8	-13.9
		6.4	8.4	11.5			5.0	4.5	5.9			22.7	20.6	18.8		
McKillop	No.	123	138	176	43.1	27.5	101	82	87	-13.9	6.1	429	336	292	-31.9	-13.1
		7.2	8.6	11.2			5.9	5.1	5.5			25.0	20.9	18.6		
Morris	No.	113	139	140	23.9	0.7	83	75	77	-7.2	2.7	435	366	311	-28.5	-15.0
		6.7	8.8	9.2			5.0	4.7	5.1			26.0	23.1	20.5		
Stanley	No.	144	582	156	8.3	-73.2	109	393	89	-18.3	-77.4	459	547	327	-28.8	-40.2
		7.4	20.5	10.2			5.6	13.9	5.8			23.5	19.3	21.3		
Stephen	No.	371	317	596	60.6	88.0	601	287	402	-33.1	40.1	1,383	1,268	1,227	-11.3	-3.2
		8.1	7.0	12.2			13.2	6.3	8.2			30.3	27.9	25.2		
Tuckersmith	No.	470	200	644	37.0	222.0	453	121	338	-25.4	179.3	911	862	891	-2.2	3.4
		14.3	6.2	15.9			13.8	3.8	8.4			27.8	26.8	22.0		
Turnberry	No.	87	104	151	73.6	45.2	58	60	56	-3.4	-6.7	349	289	276	-20.9	-4.5
		6.3	7.4	10.9			4.2	4.3	4.1			25.3	20.5	20.0		
Usborne	No.	108	17	141	30.6	11.0	109	83	85	-22.0	2.4	452	343	366	-19.0	6.7
		6.5	8.5	11.6			6.6	5.4	5.5			27.1	22.1	23.8		
Wanamosh, East	No.	76	86	116	55.6	31.8	69	54	41	-40.6	-24.1	270	259	239	-11.5	-7.7
		6.9	7.5	10.2			6.2	4.6	3.6			24.3	22.2	21.0		
Wanamosh, West	No.	68	91	124	82.4	36.3	62	53	46	-25.8	-13.2	278	251	217	-21.9	-13.5
		5.7	7.7	10.4			5.2	4.5	3.9			23.4	21.3	18.2		
TOTAL, HURON COUNTY		No.	3,483	4,479	55.3	20.7	3,571	3,177	3,346	-6.3	5.3	12,957	12,318	11,523	-11.1	-6.5
		%	7.1	8.3	9.9		7.2	5.9	6.2			26.3	22.9	21.2		

Table 1-a

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, HIRON COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		45-64					65 AND OVER				
		NUMBER			CHANGE		NUMBER			CHANGE	
		1951 (29)	1961 (30)	1966 (31)	1966/1951 (32)	1966/1961 (33)	1951 (34)	1961 (35)	1966 (36)	1966/1951 (37)	1966/1961 (38)
TOWNS											
Clinton	No.	419	611	677	61.6	10.8	405	402	407	0.2	1.2
		16.5	17.5	20.6			15.9	11.5	12.4		
Exeter	No.	445	513	649	45.8	26.5	364	490	545	49.7	11.2
		17.5	16.8	20.1			14.3	16.1	16.9		
Goderich	No.	970	1,248	1,398	44.1	12.0	746	891	927	24.3	4.0
		19.7	19.5	20.8			15.1	13.9	13.8		
Seaforth	No.	382	494	539	41.1	9.1	384	368	382	-0.5	3.8
		18.1	21.9	24.1			18.1	16.3	17.0		
Wingham	No.	517	571	593	14.7	3.9	381	411	452	18.6	10.0
		19.6	19.5	19.9			14.4	14.1	15.2		
VILLAGES											
Bayfield	No.	-	-	126	-	-	-	-	93	-	-
		-	-	27.2			-	-	20.1		
Blyth	No.	134	169	158	17.9	-6.5	134	134	148	10.4	10.4
		20.2	23.4	19.8			20.2	18.5	18.5		
Brussels	No.	166	156	164	-1.2	5.1	185	219	203	9.7	-7.3
		20.4	18.5	20.0			22.8	25.9	24.8		
Hensall	No.	133	151	166	24.8	9.9	167	176	164	-1.8	-6.8
		18.7	16.3	17.8			23.4	19.0	17.6		
Zurich	No.	-	138	157	-	13.8	-	132	124	-	-6.1
		-	19.1	21.3			-	18.2	16.8		
TOWNSHIPS											
Ashfield	No.	359	316	324	-9.7	2.5	197	165	147	-25.4	-10.9
		21.1	18.7	19.7			11.5	9.8	8.9		
Colborne	No.	229	268	254	10.9	-5.2	126	115	114	-9.5	-0.9
		20.1	21.7	20.2			11.1	9.3	9.1		
Goderich	No.	305	335	447	46.6	33.4	166	152	199	19.9	30.9
		19.0	18.4	20.7			10.3	8.3	9.2		
Grey	No.	442	408	411	-7.0	0.7	214	173	164	-23.4	-5.2
		22.5	21.4	22.5			10.9	9.0	9.0		
Hay	No.	529	375	383	-27.6	2.1	287	149	147	-48.8	-1.3
		20.0	18.7	19.9			10.9	7.5	7.6		
Howick	No.	604	639	638	5.6	-0.2	384	312	318	-17.2	1.9
		21.1	23.2	22.7			13.4	11.3	11.3		
Hullett	No.	409	390	372	-9.0	-4.6	219	202	186	-15.1	-7.9
		22.1	20.0	20.2			11.8	10.3	10.1		
McKillop	No.	317	334	334	5.4	-	183	138	125	-31.7	-9.4
		18.4	20.7	21.3			10.6	8.6	8.0		
Morris	No.	363	329	343	-5.5	4.3	180	175	162	-10.0	-7.4
		21.7	20.8	22.6			10.7	11.0	10.6		
Stanley	No.	374	427	328	-12.3	-23.2	274	215	140	-48.9	-34.9
		19.2	15.0	21.4			14.1	7.6	9.1		
Stephen	No.	577	570	634	9.9	11.2	310	295	289	-6.8	-2.0
		12.7	12.5	13.0			6.8	6.5	5.9		
Tuckersmith	No.	381	471	489	28.3	3.8	283	293	387	36.7	32.1
		11.6	14.6	12.1			8.6	9.1	9.6		
Turnberry	No.	292	307	298	2.1	-2.9	181	167	151	-16.6	-9.6
		21.1	21.8	21.7			13.1	11.9	10.9		
Ustons	No.	359	344	295	-17.8	-14.2	144	145	132	-8.3	-9.0
		21.5	22.2	19.2			8.6	9.3	8.6		
Wawanoosh, East	No.	350	228	228	-8.8	-	101	94	76	-24.8	-19.1
		22.5	19.5	20.0			9.1	8.1	6.7		
Wawanoosh, West	No.	254	254	252	4.1	-0.8	194	146	139	-28.4	-4.8
		20.3	21.6	21.2			16.3	12.4	11.7		
TOTAL, HIRON COUNTY	No.	9,198	10,046	10,657	15.9	6.1	6,210	6,159	6,321	1.8	2.6
		18.7	18.7	19.6			12.6	11.4	11.6		

TABLE 1.b

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, PERTH COUNTY, 1951, 1961 AND 1966

		TOTAL			0-4			% CHANGE			5-14			% CHANGE		
		NUMBER			NUMBER			NUMBER			NUMBER			NUMBER		
		1951 (1)	1961 (2)	1966 (3)	1951 (4)	1961 (5)	1966 (6)	1966/1951 (7)	1966/1961 (8)	1951 (9)	1961 (10)	1966 (11)	1966/1951 (12)	1966/1961 (13)		
CITIES																
Stratford	No.	18,785	20,467	23,068	1,967	2,022	2,164	10.0	7.0	2,655	3,926	4,326	62.9	10.2		
	%	100.0	100.0	100.0	10.5	9.9	9.4			14.1	19.2	18.8				
TOWNS																
Listowel	No.	3,469	4,002	4,526	393	421	466	18.6	10.7	490	731	831	69.6	13.7		
	%	100.0	100.0	100.0	11.3	10.5	10.3			14.1	18.3	18.4				
Mitchell	No.	1,979	2,247	2,371	197	219	190	-3.6	-13.2	237	361	423	78.5	17.2		
	%	100.0	100.0	100.0	9.9	9.8	8.0			12.0	16.1	17.9				
St. Mary's	No.	3,995	4,482	4,750	462	482	474	2.6	-1.7	564	893	916	62.4	2.6		
	%	100.0	100.0	100.0	11.6	10.8	10.0			14.1	19.9	19.3				
VILLAGES																
Milverton	No.	1,055	1,111	1,122	81	91	81	-	-11.0	161	186	187	16.1	0.5		
	%	100.0	100.0	100.0	7.7	8.2	7.2			15.2	16.7	16.7				
Tavistock (part)	No.	622	670	-	54	60	-	-	-	74	95	-	-	-		
	%	100.0	100.0	-	8.7	8.9	-			11.9	14.2	-				
TOWNSHIPS																
Blanshard	No.	1,828	1,991	1,917	211	227	195	-7.6	-14.1	338	499	471	39.3	-5.6		
	%	100.0	100.0	100.0	11.5	11.4	10.2			18.5	25.1	24.6				
Donnie	No.	2,326	2,595	2,429	289	293	276	-4.5	-5.8	420	573	532	26.7	-7.2		
	%	100.0	100.0	100.0	12.4	11.3	11.3			18.1	22.1	21.9				
Easthope, North	No.	1,792	2,116	2,082	194	258	254	30.9	-1.6	296	482	493	66.6	2.3		
	%	100.0	100.0	100.0	10.8	12.2	12.2			16.5	22.8	23.7				
Easthope, South	No.	1,371	1,646	1,721	164	224	205	25.0	-8.5	255	353	430	68.6	21.8		
	%	100.0	100.0	100.0	12.0	13.6	11.9			18.6	21.4	25.0				
Ellice	No.	2,290	2,704	2,703	243	336	322	32.5	-4.2	389	613	678	74.3	10.6		
	%	100.0	100.0	100.0	10.6	12.4	11.9			17.0	22.7	25.1				
Elma	No.	3,291	3,323	3,532	389	345	398	2.3	15.4	631	763	780	23.6	2.2		
	%	100.0	100.0	100.0	11.8	10.4	11.3			19.2	23.0	22.1				
Fullarton	No.	1,548	1,555	1,541	161	165	174	8.1	5.5	273	348	350	28.2	0.6		
	%	100.0	100.0	100.0	10.4	10.6	11.3			17.6	22.4	22.7				
Hibbert	No.	1,562	1,636	1,617	173	203	190	9.8	-6.4	290	369	375	29.3	1.6		
	%	100.0	100.0	100.0	11.1	12.4	11.7			18.6	22.6	23.2				
Logan	No.	2,233	2,262	2,270	236	297	275	16.5	-7.4	421	483	570	35.4	18.0		
	%	100.0	100.0	100.0	10.6	13.1	12.1			18.8	21.4	25.1				
Mornington	No.	2,413	2,509	2,596	300	334	339	13.0	1.5	548	622	680	24.1	9.3		
	%	100.0	100.0	100.0	12.4	13.3	13.1			22.7	24.8	26.2				
Wallace	No.	2,025	2,136	2,179	213	271	233	9.4	-14.0	366	471	556	51.9	18.0		
	%	100.0	100.0	100.0	10.5	12.7	10.7			18.1	22.1	25.5				
TOTAL, PERTH COUNTY	No.	52,584	57,452	60,424	5,727	6,248	6,236	8.9	-0.2	8,408	11,768	12,598	49.8	7.1		
	%	100.0	100.0	100.0	10.9	10.9	10.3			16.0	20.5	20.9				

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 23, (1951), Bulletin SP-1, (92-525), (1961), and Bulletin S-2, (92-632), (1966).

TABLE 1.b

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, PERTH COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		15-19				20-24				25-44			
		NUMBER				NUMBER				NUMBER			
		1951 (15)	1961 (16)	1966 (17)	CHANGE 1966/1951 (18)	1951 (19)	1961 (20)	1966 (21)	CHANGE 1966/1951 (22)	1951 (23)	1961 (24)	1966 (25)	CHANGE 1966/1951 (26)
CITIES	No.												
Stratford	%	1,211 6.4	1,439 7.0	2,112 9.2	74.4 46.8	1,407 7.5	1,253 6.1	1,642 7.1	16.7 31.0	5,288 28.2	5,111 25.0	5,426 23.5	2.6 6.2
TOWNS													
Lastowel	No.	212	272	399	88.2	231	244	263	13.9	922	894	956	3.7
	%	6.1	6.8	8.8	46.7	6.7	6.1	5.8	7.8	26.6	22.3	21.1	6.9
Mitchell	No.	104	144	196	88.5	136	136	117	-14.0	418	502	468	-6.8
	%	5.3	6.4	8.3	36.1	6.9	4.6	4.9	13.6	21.1	22.3	19.7	12.0
St. Mary's	No.	207	329	468	126.1	270	257	312	15.6	991	1,025	961	-3.0
	%	5.2	7.3	9.9	42.2	6.8	5.7	6.6	21.4	24.8	22.9	20.2	-6.2
VILLAGES													
Milverton	No.	77	76	87	13.0	64	59	82	28.1	267	238	207	-22.5
	%	7.3	6.8	7.8	14.5	6.1	5.3	7.3	39.0	25.3	21.4	18.4	-13.0
Tavistock (part)	No.	32	43	-	-	46	34	-	-	160	128	-	-
	%	5.1	6.4	-	-	7.4	5.1	-	-	25.7	19.1	-	-
TOWNSHIPS													
Blanshard	No.	109	146	214	96.3	107	92	85	-20.6	453	463	414	-10.6
	%	6.0	7.3	11.1	46.6	5.8	4.6	4.4	-7.6	24.8	23.3	21.6	-8.6
Donnie	No.	146	230	238	63.0	152	130	157	3.3	622	624	505	19.1
	%	6.3	8.9	9.8	3.5	6.5	5.0	6.5	20.8	26.7	24.0	20.8	-18.8
Easthope, North	No.	136	157	180	32.4	132	94	107	-18.9	502	573	487	-3.0
	%	7.6	7.4	8.6	14.6	7.4	4.4	5.2	13.8	28.0	27.1	23.4	-15.0
Easthope, South	No.	92	128	154	67.4	103	94	103	-	365	406	391	7.1
	%	6.7	7.8	8.9	20.3	7.5	5.7	6.0	9.6	26.6	24.7	22.7	-3.7
Ellice	No.	178	184	212	19.1	153	155	170	2.0	574	627	598	4.2
	%	7.8	6.8	7.8	15.2	6.7	6.7	5.8	0.6	25.1	23.2	22.1	-4.6
Elma	No.	229	287	338	47.6	197	185	222	12.7	832	750	772	2.9
	%	7.0	8.6	9.6	17.8	6.0	5.6	6.3	20.0	25.3	22.6	21.8	-9.0
Fullarton	No.	114	126	152	33.3	101	77	92	-8.9	395	369	354	-10.4
	%	7.4	8.1	9.9	20.6	6.5	5.0	6.0	19.5	25.5	25.0	23.0	-9.0
Hibbert	No.	104	131	149	43.3	79	77	93	17.7	396	351	320	-8.8
	%	6.6	8.0	9.2	13.7	5.1	4.7	5.8	20.8	25.4	21.5	19.8	-8.8
Logan	No.	183	199	188	2.7	176	132	120	-31.8	555	525	513	-2.3
	%	8.2	8.8	8.3	-5.5	7.9	5.8	5.3	-9.1	24.9	23.2	22.6	-7.6
Mornington	No.	219	222	236	7.8	157	150	151	-3.8	567	518	536	3.5
	%	9.1	8.9	9.1	6.3	6.5	6.0	5.8	0.7	23.5	20.6	20.6	-5.5
Wallace	No.	149	177	200	34.2	150	118	119	-20.7	518	503	485	-3.6
	%	7.4	8.3	9.2	13.0	7.4	5.5	5.5	0.8	25.6	23.5	22.2	-3.6
TOTAL, PERTH COUNTY	No.	3,502	4,290	5,523	57.7	3,661	3,254	3,821	4.4	13,825	13,627	13,393	-3.1
	%	6.6	7.5	9.1	28.7	7.0	5.7	6.3	17.4	26.3	23.7	22.2	-1.7

TABLE 1. b

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, PERTH COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		45-64						65 AND OVER					
		NUMBER			% CHANGE			NUMBER			% CHANGE		
		1951 (29)	1961 (30)	1966 (31)	1966/1951 (32)	1966/1961 (33)		1951 (34)	1961 (35)	1966 (36)	1966/1951 (37)	1966/1961 (38)	
CITIES													
Stratford	No.	4,042	4,247	4,718	16.7	11.1		2,215	2,469	2,680	21.0	8.5	
	%	21.5	20.7	20.4				11.8	12.1	11.6			
TOWNS													
Listowel	No.	677	858	952	40.6	11.0		544	582	659	21.1	13.2	
	%	19.5	21.4	21.0				15.7	14.6	14.6			
Mitchell	No.	481	450	488	1.5	8.4		406	468	489	20.4	4.5	
	%	24.3	20.0	20.6				20.5	20.8	20.6			
St. Mary's	No.	828	883	947	14.4	7.2		673	613	672	-0.1	9.6	
	%	20.7	19.7	19.9				16.8	13.7	14.1			
VILLAGES													
Milverton	No.	230	255	257	11.7	0.8		175	206	221	26.3	7.3	
	%	21.8	23.0	22.9				16.6	18.6	19.7			
Tavistock (part)	No.	146	172	-	-	-		110	138	-	-	-	
	%	23.5	25.7	-				17.7	20.6	-			
TOWNSHIPS													
Blanshard	No.	396	379	379	-4.3	-		214	185	159	-25.7	-14.1	
	%	21.7	19.0	19.8				11.7	9.3	8.3			
Downie	No.	463	485	496	7.1	2.3		234	260	225	-3.8	-13.5	
	%	19.9	18.7	20.4				10.1	10.0	9.3			
Easthope, North	No.	368	355	381	3.5	7.3		164	197	180	9.8	-8.6	
	%	20.5	16.8	18.3				9.2	9.3	8.6			
Easthope, South	No.	265	287	287	8.3	-		127	154	151	18.9	-1.9	
	%	19.3	17.4	16.7				9.3	9.4	8.8			
Ellice	No.	509	515	476	-6.5	-7.6		244	274	261	7.0	-4.7	
	%	22.2	19.1	17.6				10.6	10.1	9.7			
Elma	No.	666	646	674	1.2	4.3		347	347	348	0.3	0.3	
	%	20.2	19.4	19.1				10.5	10.4	9.8			
Fullarton	No.	349	306	295	-15.5	-3.6		155	144	124	-20.0	-13.9	
	%	22.6	19.7	19.1				10.0	9.2	8.0			
Hibbert	No.	347	326	329	-5.2	0.9		173	179	161	-6.9	-10.1	
	%	22.2	19.9	20.3				11.1	10.9	10.0			
Logan	No.	456	445	419	-8.1	-5.8		206	181	185	-10.2	2.2	
	%	20.4	19.7	18.5				9.2	8.0	8.1			
Mornington	No.	436	472	466	6.9	-1.3		186	191	188	1.1	-1.6	
	%	18.1	18.8	18.0				7.7	7.6	7.2			
Wallace	No.	422	430	425	0.7	-1.2		207	166	161	-22.2	-3.0	
	%	20.8	20.1	19.5				10.2	7.8	7.4			
TOTAL, PERTH COUNTY		No.	11,081	11,511	11,989	8.2	4.2	6,380	6,754	6,864	7.6	1.6	
		%	21.1	20.0	19.8			12.1	11.7	11.4			

TABLE 1.c

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WATERLOO COUNTY, 1951, 1961 AND 1966

		TOTAL			NUMBER			0-4			% CHANGE			NUMBER			5-14			% CHANGE		
		1951	1961	1966	1951	1961	1966	1966/1951	1966/1961	1951	1961	1966	1966/1951	1966/1961	1951	1961	1966	1966/1951	1966/1961	1966/1951	1966/1961	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)								
CITIES																						
Galt	No.	19,207	27,830	33,491	2,072	2,927	3,680	77.6	25.7	2,682	5,561	6,537	143.7	17.6								
	%	100.0	100.0	100.0	10.8	10.5	11.0			14.0	20.0	19.5										
Kitchener	No.	44,867	74,485	93,255	4,570	8,883	10,533	130.5	18.6	5,929	14,248	18,465	211.4	29.6								
	%	100.0	100.0	100.0	10.2	11.9	11.3			13.2	19.1	19.8										
Waterloo	No.	11,991	21,366	29,889	1,349	2,754	3,435	154.6	24.7	1,790	4,633	6,295	251.7	35.9								
	%	100.0	100.0	100.0	11.3	12.9	11.5			14.9	21.7	21.1										
TOWNS																						
Elmira	No.	2,589	3,337	4,047	250	372	434	66.9	16.7	333	642	829	148.9	29.1								
	%	100.0	100.0	100.0	10.0	11.2	10.7			12.9	19.2	20.5										
Hespeler	No.	3,862	4,519	5,381	427	503	595	39.3	18.3	526	909	1,112	111.4	22.3								
	%	100.0	100.0	100.0	11.1	11.1	11.1			13.6	20.1	20.7										
New Hamburg	No.	1,738	2,181	2,438	201	218	266	32.3	22.0	273	449	499	82.8	11.1								
	%	100.0	100.0	100.0	11.6	10.0	10.9			15.7	20.6	20.5										
Preston	No.	7,619	11,577	13,380	816	1,322	1,453	78.1	9.9	1,060	2,239	2,617	146.9	16.9								
	%	100.0	100.0	100.0	10.7	11.4	10.9			13.9	19.3	19.6										
VILLAGES																						
Ayr	No.	931	1,016	1,134	91	107	125	37.4	16.8	133	210	243	82.7	15.7								
	%	100.0	100.0	100.0	9.8	10.5	11.0			14.3	20.7	21.4										
Bridgeport	No.	1,137	1,672	2,111	163	252	283	73.6	12.3	186	425	507	172.6	19.3								
	%	100.0	100.0	100.0	14.3	15.1	13.4			16.4	25.4	24.0										
Wellesley	No.	-	-	659	-	-	62	-	-	-	-	107	-	-								
	%	-	-	100.0	-	-	9.4			-	-	16.2										
TOWNSHIPS																						
Dumfries, North	No.	4,178	3,399	3,696	537	448	361	-32.8	-19.4	789	773	859	8.9	11.1								
	%	100.0	100.0	100.0	12.9	13.2	9.8			18.9	22.8	23.2										
Waterloo	No.	13,682	9,000	9,938	2,032	1,197	1,153	-43.3	-3.7	2,264	2,129	2,509	10.8	17.8								
	%	100.0	100.0	100.0	14.9	13.3	11.6			16.5	23.7	25.3										
Wellesley	No.	4,079	5,146	4,889	643	663	701	9.0	5.7	965	1,289	1,241	28.6	-3.7								
	%	100.0	100.0	100.0	13.7	12.8	14.3			20.6	25.0	25.4										
Wilmot	No.	4,865	5,714	6,397	636	713	816	28.3	14.4	982	1,413	1,603	63.2	13.4								
	%	100.0	100.0	100.0	13.1	12.5	12.8			20.2	24.7	25.1										
Woolwich	No.	4,778	5,492	6,023	608	750	796	30.9	6.1	1,028	1,268	1,422	38.3	12.1								
	%	100.0	100.0	100.0	12.7	13.6	13.2			21.5	23.1	23.6										
TOTAL, WATERLOO COUNTY		No.	126,123	176,754	216,728	14,405	21,109	24,693	71.4	17.0	18,940	36,188	44,845	136.8	23.9							
		%	100.0	100.0	100.0	11.4	11.9	11.4			15.0	20.5	20.7									

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 23, (1951), Bulletin SP-1, (92-525), (1961), and Bulletin S-2, (92-632), (1966).

TABLE 1.c

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WATERLOO COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		15-19					20-24					25-44				
		NUMBER					NUMBER					NUMBER				
		1951 (15)	1961 (15)	1966 (16)	1966/1951 (17)	1966/1961 (18)	1951 (19)	1961 (20)	1966 (21)	1966/1951 (22)	1966/1961 (23)	1951 (24)	1961 (25)	1966 (26)	1966/1951 (27)	1966/1961 (28)
CITIES																
Galt	No.	1,239	2,119	3,227	160.5	52.3	1,513	1,671	2,627	73.6	57.2	5,834	7,757	8,995	47.3	10.6
		6.4	7.6	9.6			7.9	6.0	7.8			30.4	27.9	25.7		
Kitchener	No.	3,174	4,978	7,945	150.3	59.6	4,331	5,404	8,226	89.9	52.2	14,201	22,017	25,526	79.7	15.9
		7.1	9.7	8.5			9.7	7.2	8.8			31.6	29.6	27.4		
Waterloo	No.	819	1,467	2,597	217.1	77.0	964	1,275	2,667	176.7	109.2	3,769	6,276	8,230	118.4	31.1
		6.8	9.9	8.7			8.1	6.0	8.9			31.4	29.4	27.5		
TOWNS																
Elmira	No.	165	240	348	110.9	45.0	185	186	295	59.5	58.6	743	811	944	27.1	16.4
		6.4	7.2	8.6			7.1	5.6	7.3			28.7	24.3	23.3		
Hespeler	No.	256	316	539	108.9	70.6	392	290	419	6.9	44.5	1,169	1,159	1,316	12.6	13.5
		6.7	7.0	10.0			10.1	6.4	7.8			30.3	25.7	24.4		
New Hamburg	No.	96	175	217	126.0	24.0	119	135	159	33.6	17.8	492	533	559	13.6	4.5
		5.5	8.0	8.9			6.9	6.2	6.5			28.3	24.4	22.9		
Preston	No.	519	830	1,157	122.9	39.4	538	647	1,028	91.1	58.9	2,321	3,191	3,379	45.6	5.9
		6.8	7.2	8.6			7.0	5.6	7.7			30.5	27.6	25.2		
VILLAGES																
Ayr	No.	68	69	95	39.7	37.7	51	48	71	39.2	47.9	219	233	255	16.4	9.4
		7.3	6.8	8.4			5.5	4.7	6.3			23.5	22.9	22.5		
Bridgeport	No.	79	114	172	117.7	50.9	88	87	155	76.1	78.2	375	473	583	55.5	23.3
		6.9	6.8	8.2			7.7	5.2	7.3			33.0	28.3	27.6		
Wellsville	No.	-	-	55	-	-	-	-	31	-	-	-	-	131	-	-
		-	-	8.4			-	-	4.7			-	-	19.9		
TOWNSHIPS																
Dumfries, North	No.	370	300	384	3.8	28.0	261	189	270	3.4	42.9	1,227	882	866	-29.4	-1.8
		8.9	8.8	10.4			6.2	5.6	7.3			29.4	25.9	23.4		
Waterloo	No.	870	667	887	2.0	33.0	1,141	408	558	-51.1	36.8	4,312	2,439	2,524	-41.5	3.5
		6.4	7.4	8.9			8.3	4.5	5.6			31.5	27.1	25.4		
Wellsville	No.	411	430	498	21.2	15.8	351	307	335	-7.4	5.9	1,091	1,163	1,070	-1.9	-8.0
		8.8	8.3	10.2			7.5	5.9	6.6			23.3	22.5	21.9		
Wilmot	No.	355	478	570	60.6	19.2	364	347	415	14.0	19.6	1,280	1,312	1,499	17.1	9.3
		7.3	8.4	8.9			7.5	6.1	6.5			26.3	24.0	23.4		
Woodstock	No.	406	506	566	39.4	11.9	373	351	430	15.3	22.5	1,197	1,305	1,391	16.2	6.6
		8.5	9.2	9.4			7.8	6.4	7.1			25.1	23.8	23.1		
TOTAL, WATERLOO COUNTY	No.	8,829	12,689	19,237	118.1	51.8	10,671	11,345	17,676	65.6	55.8	38,230	49,611	56,868	48.8	14.6
		7.0	7.2	8.9			8.5	6.4	8.2			30.3	28.1	26.2		

TABLE 1.c

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WATERLOO COUNTY, 1951, 1961 AND 1966 (Cont'd.)

45-64														65 AND OVER			
		NUMBER			% CHANGE			NUMBER			% CHANGE						
		1951	1961	1966	1966/1951		1966/1961	1951	1961	1966	1966/1951						
		(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)						
CITIES																	
Galt	No.	3,844	5,205	5,994	55.9	15.2	2,023	2,590	2,831	39.9	9.3						
	%	20.0	18.7	17.9			10.5	9.3	8.5								
	No.	9,240	13,698	15,928	72.4	16.3	3,422	5,257	6,632	93.8	26.2						
Kitchener	%	20.6	18.4	17.1			7.6	7.1	7.1								
	No.	2,376	3,624	4,874	105.1	34.5	924	1,337	1,791	93.8	34.0						
	%	19.8	16.9	16.3			7.7	6.2	6.0								
TOWNS																	
Elmira	No.	572	675	757	32.3	12.1	331	411	440	32.9	7.1						
	%	22.1	20.2	18.7			12.8	12.3	10.9								
	No.	743	923	984	32.4	6.6	347	419	416	19.9	-0.7						
Hespeler	%	19.2	20.4	18.3			9.0	9.3	7.7								
	No.	339	425	476	40.4	12.0	218	246	262	20.2	6.5						
	%	19.5	19.5	19.5			12.5	11.3	10.7								
Preston	No.	1,552	2,216	2,473	59.3	11.6	813	1,132	1,273	56.6	12.5						
	%	20.4	19.1	18.5			10.7	9.8	9.5								
	VILLAGES																
Ayr	No.	198	196	180	-9.1	-8.2	171	153	165	-3.5	7.8						
	%	21.3	19.3	15.9			18.3	15.1	14.5								
	No.	178	243	320	79.8	31.7	68	78	91	33.8	16.7						
Bridgeport	%	15.7	14.5	15.2			6.0	4.7	4.3								
	No.	-	-	140	-	-	-	-	133	-	-						
	%	-	-	21.2			-	-	20.2								
TOWNSHIPS																	
Dumfries, North	No.	704	585	716	1.7	22.4	290	222	240	-17.2	8.1						
	%	16.8	17.2	19.4			6.9	6.5	6.5								
	No.	2,265	1,499	1,630	-28.0	8.7	798	661	677	-15.2	2.4						
Waterloo	%	16.6	16.7	16.4			5.8	7.3	6.8								
	No.	807	872	739	-8.4	-15.3	411	442	315	-23.4	-28.7						
	%	17.3	16.9	15.1			8.8	8.6	6.5								
Wellesley	No.	17.3	16.9	15.1	25.8	11.3	402	435	430	7.0	-1.1						
	%	846	956	1,064			8.2	7.6	6.7								
	No.	17.4	16.7	16.6	20.0	10.0	351	423	440	25.4	4.0						
Wilmut	%	815	889	978			7.3	7.7	7.3								
	No.	17.1	16.2	16.3													
	TOTAL, WATERLOO COUNTY																
		No.	24,479	32,006	37,253	52.2	16.4	10,569	13,806	16,136	52.7	16.9					
		%	19.4	18.1	17.2			8.4	7.8	7.4							

TABLE 1.d

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WELLINGTON COUNTY, 1951, 1961 AND 1966

	TOTAL			NUMBER				0-4				5-14							
	1951		1961	1951		1961	1966/1951		1951	1961		1966/1951							
	(1)	(2)		(3)	(4)		(5)	(6)		(7)	(8)	(9)	(10)	(11)	(12)	(13)			
CITIES																			
Guelph	No.	27,386	39,838	51,377	2,931	4,778	5,564	89.2	16.0	3,926	7,858	10,502	167.5	33.6					
	%	100.0	100.0	100.0	10.7	12.0	10.8			14.3	19.7	20.4							
TOWNS																			
Fergus	No.	3,387	3,831	4,376	390	374	469	20.3	25.4	496	792	889	79.2	12.2					
	%	100.0	100.0	100.0	11.5	9.7	10.7			14.6	20.7	20.3							
Harrison	No.	1,494	1,631	1,768	167	152	134	-19.8	-11.8	196	302	317	61.7	5.0					
	%	100.0	100.0	100.0	11.2	9.3	7.7			13.1	18.5	18.1							
Mount Forest	No.	2,291	2,623	2,859	217	259	342	21.7	1.9	342	505	539	57.6	6.7					
	%	100.0	100.0	100.0	9.5	9.9	9.2			14.9	19.2	18.9							
Palmerston	No.	1,573	1,554	1,631	152	120	117	-23.0	-2.5	228	251	301	32.0	19.9					
	%	100.0	100.0	100.0	9.6	7.7	7.2			14.5	16.2	18.4							
VILLAGES																			
Arthur	No.	1,088	1,200	1,262	120	118	104	-13.3	-11.9	171	260	255	49.1	-1.9					
	%	100.0	100.0	100.0	11.0	9.8	8.4			15.7	21.7	20.5							
Clifford	No.	510	562	515	43	44	33	-23.3	-25.0	80	84	81	1.3	-3.6					
	%	100.0	100.0	100.0	8.4	8.1	6.4			15.7	15.7	15.7							
Dayton	No.	541	646	677	56	70	76	35.7	8.6	79	130	128	62.0	-1.5					
	%	100.0	100.0	100.0	10.3	10.8	11.2			14.6	20.1	18.9							
Elora	No.	1,348	1,486	1,644	149	160	167	12.1	4.4	216	300	332	53.7	10.7					
	%	100.0	100.0	100.0	11.1	10.8	10.2			16.0	20.2	20.2							
Erin	No.	650	1,005	1,195	56	104	148	164.3	42.3	103	202	252	144.7	24.8					
	%	100.0	100.0	100.0	8.6	10.3	12.4			15.8	20.1	21.1							
TOWNSHIPS																			
Arthur	No.	1,628	1,717	1,668	192	201	196	2.1	-2.5	298	431	426	43.0	-1.2					
	%	100.0	100.0	100.0	11.8	11.7	11.8			18.3	25.1	25.5							
Ermosa	No.	2,495	3,093	3,190	301	388	343	14.0	-11.6	418	745	776	85.6	4.2					
	%	100.0	100.0	100.0	12.1	12.6	10.7			16.8	26.1	24.3							
Erin	No.	2,635	3,272	3,430	257	411	387	50.6	-5.8	516	719	780	51.2	8.5					
	%	100.0	100.0	100.0	9.7	12.6	11.3			19.6	22.0	22.7							
Gatarafraxa, West	No.	1,422	1,573	1,555	180	195	154	-14.4	-21.0	261	383	392	50.2	2.3					
	%	100.0	100.0	100.0	12.7	12.4	9.9			18.3	24.3	25.2							
Guelph	No.	4,771	5,636	6,122	441	612	578	-35.6	-53.6	573	979	954	-4.2	-43.9					
	%	100.0	100.0	100.0	9.2	10.8	12.3			17.4	21.4	21.8							
Luther, West	No.	1,224	1,252	1,132	159	150	112	-29.6	-25.3	12.0	345	305	27.6	-11.6					
	%	100.0	100.0	100.0	13.0	12.0	9.9			19.5	27.6	27.0							
Maryborough	No.	1,981	1,993	2,084	228	212	247	8.3	16.5	372	464	498	33.9	7.3					
	%	100.0	100.0	100.0	11.5	10.7	11.9			18.8	23.3	23.9							
Minto	No.	2,084	2,077	2,064	234	265	215	-8.1	-18.9	400	497	562	40.5	13.1					
	%	100.0	100.0	100.0	11.2	12.8	10.4			19.2	23.9	27.2							
Nichol	No.	1,606	1,925	2,126	209	196	236	12.9	20.4	23.9	471	474	83.0	0.6					
	%	100.0	100.0	100.0	13.0	10.2	11.1			16.1	24.5	22.3							
Peel	No.	2,751	2,988	3,087	361	439	458	26.9	4.3	629	749	856	36.1	14.3					
	%	100.0	100.0	100.0	13.1	14.7	14.8			22.9	25.1	27.7							
Pikington	No.	1,122	1,227	1,288	149	174	165	10.7	-5.2	248	305	330	33.1	8.2					
	%	100.0	100.0	100.0	13.3	14.2	12.8			22.1	24.9	25.6							
Pushinch	No.	2,943	3,593	2,982	370	458	328	-11.4	-28.4	568	790	644	17.5	-18.5					
	%	100.0	100.0	100.0	12.6	12.8	11.0			18.6	22.0	21.6							
TOTAL, WELLINGTON COUNTY	No.	66,930	84,702	94,177	7,362	9,880	10,181	38.3	3.0	10,598	17,562	20,188	90.5	15.0					
	%	100.0	100.0	100.0	11.0	11.7	10.8			15.8	20.7	21.4							

Source: Canada, Dominion Bureau of Statistics; Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 23, (1951), Bulletin SP-1, (92-525), (1961), and Bulletin S-2, (92-632), (1966).

TABLE 1.d

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WELLINGTON COUNTY, 1951, 1961 AND 1966 (Cont'd.)

		15-19					20-24					25-44					
		NUMBER		CHANGE			NUMBER		CHANGE			NUMBER		CHANGE			
		1951 (14)	1961 (15)	1966 (16)	1966/1951 (17)		1966/1961 (18)	1951 (19)	1961 (20)	1966 (21)		1966/1951 (22)	1966/1961 (23)	1951 (24)	1961 (25)	1966 (26)	1966/1951 (27)
CITIES																	
Guelph	No.	1,965	2,737	4,772	142.8	74.4	2,253	2,551	4,013	78.1	57.3	7,980	10,953	12,974	62.6	18.5	
	%	7.2	6.9	9.3			8.2	6.4	7.8			29.1	27.5	25.3			
TOWNS																	
Fergus	No.	236	286	365	54.7	27.6	277	200	314	13.4	57.0	911	889	957	5.0	7.6	
	%	7.0	7.5	8.3			8.2	5.2	7.2			26.9	23.2	21.9			
Harriston	No.	120	112	147	22.5	31.3	109	61	84	-22.9	37.7	371	358	369	-0.5	3.1	
	%	8.0	6.9	8.4			7.3	3.7	4.8			24.8	22.0	21.1			
Mount Forest	No.	169	175	196	16.0	12.0	136	138	153	12.5	10.9	531	526	568	7.0	8.0	
	%	7.4	6.7	6.9			5.9	5.3	5.3			23.2	20.0	19.9			
Palmerston	No.	96	119	129	34.4	8.4	97	69	83	-14.4	20.3	360	327	321	-10.8	-1.8	
	%	6.1	7.7	7.9			6.2	4.4	5.1			22.9	21.0	19.7			
VILLAGES																	
Arthur	No.	72	96	130	80.6	35.4	79	50	64	-19.0	28.0	251	226	203	-19.1	-10.2	
	%	6.6	8.0	10.5			7.3	4.2	5.2			23.1	18.8	16.3			
Clifford	No.	32	54	49	53.1	-9.3	28	29	18	-35.7	-37.9	109	85	82	-24.8	-3.5	
	%	6.3	10.0	9.5			5.5	5.3	3.5			21.4	15.7	15.9			
Dayton	No.	28	38	61	117.9	60.5	18	24	34	88.9	41.7	121	132	119	-1.7	-9.8	
	%	5.2	5.9	9.0			3.3	3.7	5.0			22.4	20.4	17.6			
Elora	No.	92	124	144	56.5	16.1	84	81	107	27.4	32.1	345	306	301	-12.8	-1.6	
	%	6.8	8.3	8.8			6.2	5.4	6.5			25.6	20.6	18.3			
Erin	No.	26	70	89	242.3	27.1	31	58	79	154.8	36.2	166	208	236	42.2	13.5	
	%	4.0	7.0	7.4			4.8	5.8	6.6			25.5	20.7	19.8			
TOWNSHIPS																	
Arthur	No.	122	127	157	28.7	23.6	98	69	73	-25.5	5.8	389	382	368	-5.4	-3.7	
	%	7.5	7.4	9.4			6.0	4.0	4.4			23.9	22.3	22.1			
Etamose	No.	185	224	315	70.3	40.6	162	150	174	7.4	16.0	645	737	714	10.7	-3.1	
	%	7.4	7.2	9.9			6.5	4.9	5.5			25.8	23.8	22.4			
Erin	No.	193	256	294	52.3	14.8	130	161	183	40.8	13.7	657	785	792	20.5	0.9	
	%	7.3	7.8	8.6			4.9	4.9	5.3			24.9	24.0	23.1			
Garrafraxa, West	No.	91	132	158	73.6	19.7	92	59	76	-17.4	28.8	386	371	356	-7.8	-4.0	
	%	6.4	8.4	10.2			6.5	3.8	4.9			27.1	23.6	22.9			
Guelph	No.	666	845	200	-70.0	-76.3	656	478	159	-75.8	-66.7	1,312	1,498	574	-56.3	-61.7	
	%	14.0	15.0	8.6			13.8	8.5	6.9			27.5	26.6	24.9			
Luther, West	No.	96	113	117	21.9	3.5	85	38	44	-48.2	15.8	305	272	219	-28.2	-19.5	
	%	7.8	9.0	10.3			7.0	3.0	3.9			24.9	21.7	19.3			
Maryborough	No.	139	172	186	33.8	8.1	127	88	102	-19.7	15.9	473	423	436	-7.8	3.1	
	%	7.0	8.6	8.9			6.4	4.4	4.9			21.2	20.9	20.9			
Minto	No.	176	192	199	13.1	3.6	126	89	98	-22.2	10.1	500	459	412	-17.6	-10.2	
	%	8.5	9.2	9.7			6.0	4.3	4.7			24.0	22.1	20.0			
Nichol	No.	98	140	210	114.3	50.0	90	84	93	3.3	10.7	398	427	455	14.3	6.6	
	%	6.1	7.3	9.9			5.6	4.3	4.4			24.8	22.2	21.4			
Peel	No.	230	281	291	26.5	3.6	187	155	176	-5.9	13.5	672	662	644	-4.2	-2.7	
	%	8.4	9.4	9.4			6.8	5.2	5.7			24.4	22.1	20.9			
Pikington	No.	78	96	134	71.8	39.6	58	71	78	34.5	9.9	310	304	286	-7.7	-5.9	
	%	6.9	7.8	10.4			5.2	5.8	6.1			27.6	24.8	22.2			
Puslinch	No.	201	252	283	40.8	12.3	204	180	163	-20.1	-9.4	748	885	696	-7.0	-21.4	
	%	6.8	7.0	9.5			6.9	5.0	5.5			25.4	24.6	23.3			
TOTAL, WELLINGTON COUNTY	No.	5,111	6,641	8,626	68.8	29.9	5,127	4,883	6,368	24.2	30.4	17,940	21,215	22,082	23.1	4.1	
	%	7.6	7.8	9.2			7.7	5.5	6.8			26.8	25.1	23.4			

TABLE 1.d

POPULATION DISTRIBUTION BY AGE GROUPS, INCORPORATED MUNICIPALITIES, WELLINGTON COUNTY, 1951, 1961 AND 1966 (Cont'd.)

45-64														65 AND OVER													
		NUMBER			% CHANGE					NUMBER			% CHANGE														
		1951 (29)	1961 (30)	1966 (31)	1966/1951 (32)	1966/1961 (33)			1951 (34)	1961 (35)	1966 (36)	1966/1951 (37)	1966/1961 (38)														
CITIES																											
Guelph	No.	5,544	7,250	9,042	63.1	24.7		2,787	3,711	4,530	62.5	22.1															
	%	20.3	18.2	17.6				10.2	9.3	8.8																	
TOWNS																											
Fergus	No.	723	827	830	14.8	0.4		354	463	552	55.9	19.2															
	%	21.3	21.6	19.0				10.5	12.1	12.6																	
Harriston	No.	312	359	383	22.8	6.7		219	287	314	43.4	9.4															
	%	20.9	22.0	21.9				14.7	17.6	18.0																	
Mount Forest	No.	498	555	595	19.5	7.2		398	465	544	36.7	17.0															
	%	21.7	21.2	20.8				17.4	17.7	19.0																	
Palmerston	No.	371	352	361	-2.7	2.6		269	316	319	18.6	0.9															
	%	23.6	22.7	22.1				17.1	20.3	19.6																	
VILLAGES																											
Arthur	No.	214	253	290	35.5	14.6		181	197	196	8.3	-0.5															
	%	19.7	21.1	23.3				16.6	16.4	15.8																	
Clifford	No.	119	136	128	7.6	-5.9		99	110	124	25.3	12.7															
	%	23.3	25.1	24.9				19.4	20.3	24.1																	
Drayton	No.	112	125	124	10.7	-0.8		127	127	135	6.3	6.3															
	%	20.7	19.4	18.3				23.5	19.7	20.0																	
Elora	No.	277	315	356	28.5	13.0		185	200	237	28.1	18.5															
	%	20.6	21.2	21.6				13.7	13.5	14.4																	
Erin	No.	129	193	200	55.0	3.6		139	170	191	37.4	12.4															
	%	19.9	19.2	16.7				21.4	16.9	16.0																	
TOWNSHIPS																											
Arthur	No.	374	376	324	-13.4	-13.8		155	131	124	-20.0	-5.3															
	%	23.0	21.9	19.4				9.5	7.6	7.4																	
Erasmosa	No.	510	555	601	17.8	8.3		274	294	267	-2.6	-9.2															
	%	20.4	17.9	18.8				11.0	9.5	8.4																	
Erin	No.	564	648	682	20.9	5.2		318	292	312	-1.9	6.8															
	%	21.4	19.8	19.9				12.1	8.9	9.1																	
Garafraza, West	No.	290	309	307	5.9	-0.6		122	124	112	-8.2	-9.7															
	%	20.4	19.6	19.7				8.6	7.9	7.2																	
Guelph	No.	764	900	394	-48.4	-56.2		359	324	147	-59.1	-54.6															
	%	16.0	16.0	17.1				7.5	5.7	6.4																	
Luther, West	No.	232	241	226	-2.6	-6.2		108	93	109	0.9	17.2															
	%	19.0	19.3	20.0				8.8	7.4	9.6																	
Maryborough	No.	432	431	408	-5.6	-5.3		210	203	207	-1.4	2.0															
	%	21.8	21.6	19.6				10.6	10.2	9.9																	
Minto	No.	446	419	425	-4.7	1.4		202	156	153	-24.3	-1.9															
	%	21.4	20.2	20.6				9.7	7.5	7.4																	
Nichol	No.	334	368	400	19.8	8.7		218	239	258	18.3	7.9															
	%	20.8	19.1	18.8				13.6	12.4	12.1																	
Peel	No.	484	494	457	-5.6	-7.5		188	208	205	9.0	-1.4															
	%	17.6	16.5	14.8				6.8	7.0	6.7																	
Pilkington	No.	203	193	204	0.5	5.7		76	84	91	19.7	8.3															
	%	18.1	15.7	15.8				6.8	6.8	7.1																	
Puslinch	No.	603	720	586	-2.8	-18.6		269	308	282	4.8	-8.4															
	%	20.5	20.0	19.6				9.2	8.6	9.5																	
TOTAL, WELLINGTON COUNTY		13,535	16,019	17,323	28.0	8.1		7,257	8,502	9,409	29.7	10.7															
		20.2	18.9	18.4				10.9	10.0	10.0																	

TABLE 2.

POPULATION DISTRIBUTION BY SEX, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO: 1951, 1961 AND 1966

	1951			1961			1966			CHANGES IN TOTAL POPULATION			
	POPULATION			POPULATION			POPULATION			1966/1951		1966/1961	
	Total (1)	Male (2)	Female (3)	Total (4)	Male (5)	Female (6)	Total (7)	Male (8)	Female (9)	Absolute No. (10)	% (11)	Absolute No. (12)	% (13)
HURON	49,280	25,596	23,684	53,805	27,602	26,203	34,446	28,020	26,426	5,166	10.5	641	1.2
PERTH	52,584	26,316	26,268	57,452	28,802	28,650	60,424	30,072	30,352	7,840	14.9	2,972	5.2
WATERLOO	126,123	62,166	63,957	176,754	87,941	88,813	216,728	108,034	108,674	90,605	71.8	39,974	22.6
WELLINGTON	66,930	33,773	33,157	84,702	42,829	41,873	94,177	47,445	46,732	27,247	40.7	9,475	11.2
TOTAL, MIDWESTERN ONTARIO REGION	294,917	147,851	147,066	372,713	187,174	185,539	425,775	213,591	212,184	130,858	44.4	53,062	14.2
TOTAL, PROVINCE OF ONTARIO	4,597,542	2,314,170	2,283,372	6,236,092	3,134,528	3,101,564	6,960,870	3,479,149	3,481,721	2,363,328	51.4	724,778	11.6

SOURCE: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 7, Table 7 and Table 9.

TABLE 2.4

POPULATION DISTRIBUTION BY SEX, INCORPORATED MUNICIPALITIES, HURON COUNTY, 1951, 1961 AND 1966

	CHANGE IN TOTAL POPULATION																					
	1951 POPULATION						1961 POPULATION						1966 POPULATION						1966/1951		1966/1961	
	Total		Male		Female		Total		Male		Female		Total		Male		Female		Absolute	%	Absolute	No.
	No.	(1)	No.	(2)	No.	(3)	No.	(4)	No.	(5)	No.	(6)	No.	(7)	No.	(8)	No.	(9)	No.	(10)	(11)	(12)
TOWNS																						
Clinton	2,547	1,197	1,350	3,491	1,694	1,797	3,280	1,585	1,695	733	28.8	-211										
Exeter	2,547	1,234	1,313	3,047	1,472	1,575	3,226	1,545	1,681	679	26.7	179										
Goderich	4,934	2,299	2,635	6,411	3,111	3,300	6,710	3,227	3,483	1,776	36.0	299										
Seaforth	2,118	975	1,143	2,255	1,066	1,189	2,241	1,082	1,159	123	5.8	-14										
Wingham	2,642	1,232	1,410	2,922	1,345	1,577	2,974	1,428	1,546	332	12.6	52										
VILLAGES																						
Bayfield	-	-	-	-	-	-	464	224	240	-	-	-										
Blyth	665	323	342	724	375	349	799	404	395	134	20.2	75										
Brussels	813	390	423	844	422	422	820	395	425	7	0.9	-24										
Bensall	713	345	368	926	485	441	934	467	467	221	31.0	8										
Zurich	-	-	-	723	379	344	737	370	367	-	-	14										
TOWNSHIPS																						
Ashfield	1,704	956	748	1,688	932	756	1,646	898	748	-58	-3.4	-42										
Colborne	1,136	599	537	1,233	637	596	1,257	651	606	121	10.7	24										
Goderich	1,608	855	753	1,824	978	846	2,158	1,131	1,027	550	34.2	334										
Grey	1,967	1,034	933	1,909	1,001	908	1,827	960	867	-140	-7.1	-82										
Bay	2,641	1,354	1,287	2,002	1,063	939	1,929	1,009	920	-712	-27.0	-73										
Howick	2,859	1,459	1,400	2,758	1,440	1,318	2,811	1,457	1,354	-48	-1.7	-53										
Hullett	1,855	957	898	1,953	994	959	1,841	929	912	-14	-0.8	-112										
McKillop	1,718	902	816	1,610	865	745	1,569	834	735	-149	-8.7	-41										
Morris	1,675	910	765	1,585	877	708	1,520	809	711	-155	-9.3	-65										
Stanley	1,950	990	960	2,836	1,624	1,212	1,536	766	770	-414	-21.2	-1,300										
Stephen	4,561	2,644	1,917	4,545	2,420	2,125	4,877	2,710	2,167	316	6.9	332										
Tuckersmith	3,280	2,108	1,172	3,217	1,618	1,599	4,042	2,370	1,672	762	23.2	825										
Turnberry	1,381	723	658	1,406	737	669	1,381	728	653	-	-	-25										
Usborne	1,667	877	790	1,552	825	727	1,538	804	734	-129	-7.7	-14										
Wawanosh, East	1,109	619	490	1,167	626	541	1,138	613	525	29	2.6	-29										
Wawanosh, West	1,190	614	576	1,177	616	561	1,191	624	567	1	0.1	14										
TOTAL, HURON COUNTY	49,280	25,596	23,684	53,805	27,602	26,203	54,446	28,020	26,426	5,166	10.5	641										

- N11

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966, (Ottawa: Queen's Printer), Table 7, Table 7 and Table 9.

TABLE 2.b

POPULATION DISTRIBUTION BY SEX, INCORPORATED MUNICIPALITIES, PERTH COUNTY, 1951, 1961 AND 1966

CHANGE IN TOTAL POPULATION												
	1951 POPULATION			1961 POPULATION			1966 POPULATION			1966/1951		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Absolute	%	Absolute
	No. (1)	No. (2)	No. (3)	No. (4)	No. (5)	No. (6)	No. (7)	No. (8)	No. (9)	No. (10)	% (11)	No. (12)
CITIES												
Stratford	18,785	9,019	9,766	20,467	9,912	10,555	23,068	11,130	11,938	4,283	22.8	2,601
TOWNS												
Listowel	3,469	1,616	1,853	4,002	1,921	2,081	4,526	2,133	2,393	1,057	30.5	524
Mitchell	1,979	918	1,061	2,247	1,091	1,156	2,371	1,139	1,232	392	19.8	124
St. Marys	3,995	1,918	2,077	4,482	2,158	2,324	4,750	2,314	2,436	755	18.9	268
VILLAGES												
Milverton	1,055	496	559	1,111	531	580	1,122	544	578	67	6.4	11
Tavistock (part) ^a	622	288	334	670	345	325	-	-	-	-	-	-
TOWNSHIPS												
Blanshard	1,828	958	870	1,991	1,072	919	1,917	1,002	915	89	4.9	-74
Dowdle	2,326	1,234	1,092	2,595	1,325	1,270	2,429	1,246	1,183	103	4.4	-166
Easthope, North	1,792	954	838	2,116	1,097	1,019	2,082	1,071	1,011	290	16.2	-34
Easthope, South	1,371	735	636	1,646	866	780	1,721	902	819	350	25.5	75
Ellice	2,290	1,234	1,056	2,704	1,431	1,273	2,703	1,426	1,277	413	18.0	-1
Elma	3,291	1,732	1,559	3,323	1,724	1,599	3,532	1,825	1,707	241	7.3	209
Fullarton	1,548	817	731	1,555	822	733	1,541	807	734	-7	-0.5	-14
Hibbert	1,562	804	758	1,636	822	814	1,617	835	782	55	3.5	-19
Logan	2,233	1,224	1,009	2,262	1,222	1,040	2,270	1,219	1,051	37	1.7	8
Mornington	2,413	1,267	1,146	2,509	1,299	1,210	2,596	1,315	1,281	183	7.6	87
Wallace	2,025	1,102	923	2,136	1,164	972	2,179	1,164	1,015	154	7.6	43
TOTAL, PERTH COUNTY	52,584	26,316	26,268	57,452	28,802	28,650	60,424	30,072	30,352	7,840	14.9	2,972
												5.2

^aTavistock Village placed entirely in Oxford County after 1961.

x Less than 0.05 per cent.

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 7, Table 7 and Table 9.

TABLE 2.c

POPULATION DISTRIBUTION BY SEX, INCORPORATED MUNICIPALITIES, WATERLOO COUNTY, 1951, 1961 AND 1966

	CHANGE IN TOTAL POPULATION													
	1951 POPULATION						1966/1951						1966/1961	
	1951 POPULATION			1961 POPULATION			1966 POPULATION			1966/1951			1966/1961	
	Total No. (1)	Male No. (2)	Female No. (3)	Total No. (4)	Male No. (5)	Female No. (6)	Total No. (7)	Male No. (8)	Female No. (9)	Absolute No. (10)	% (11)	Absolute No. (12)	% (13)	
CITIES														
Galt	19,207	9,286	9,921	27,830	13,569	14,261	33,491	16,545	16,946	14,284	74.4	5,661	20.3	
Kitchener	44,867	21,815	23,052	74,485	36,822	37,663	93,255	46,211	47,044	48,388	107.8	18,770	25.2	
Waterloo	11,991	5,866	6,125	21,366	10,623	10,743	29,889	14,923	14,966	17,898	149.3	8,523	39.9	
TOWNS														
Elmira	2,589	1,266	1,323	3,337	1,654	1,683	4,047	1,992	2,055	1,458	56.3	710	21.3	
Hespeler	3,862	1,889	1,973	4,519	2,314	2,205	5,381	2,768	2,613	1,519	39.3	862	19.1	
New Hamburg ^a	1,738	836	902	2,181	1,081	1,100	2,438	1,212	1,226	700	40.3	257	11.8	
Preston	7,619	3,691	3,928	11,577	5,675	5,902	13,380	6,631	6,749	5,761	75.6	1,803	15.6	
VILLAGES														
Avr	931	465	466	1,016	511	505	1,134	581	553	203	21.8	118	11.6	
Bridgeport	1,137	585	552	1,672	843	829	2,111	1,097	1,014	974	85.7	439	26.3	
Wellesley ^b	-	-	-	-	-	-	659	302	357	659	-	659	-	
TOWNSHIPS														
Dunfries, North	4,178	2,068	2,110	3,399	1,794	1,605	3,696	1,888	1,808	-482	-11.5	297	8.7	
Waterloo	13,682	7,038	6,644	9,000	4,643	4,357	9,938	5,078	4,860	-3,744	-27.4	938	10.4	
Wellesley ^b	4,679	2,411	2,268	5,186	2,654 ^c	2,512	4,889	2,516	2,373	210	4.5	-277	-5.4	
Wilmot	4,865	2,524	2,341	5,714	2,937	2,777	6,397	3,263	3,134	1,532	31.5	683	12.0	
Woolwich	4,778	2,426	2,352	5,492	2,821	2,671	6,023	3,047	2,976	1,245	26.1	531	9.7	
TOTAL, WATERLOO COUNTY	126,123	62,166	63,957	176,754	87,941	88,813	216,728	108,054	108,674	90,605	71.8	39,974	22.6	

^aNew Hamburg was classified as a village in 1951 and 1961.

^bVillage of Wellesley incorporated in 1962 (from Wellesley Township).

^c- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 7, Table 9.

TABLE 2.d

POPULATION DISTRIBUTION BY SEX, INCORPORATED MUNICIPALITIES, WELLINGTON COUNTY, 1951, 1961 AND 1966

	1951 POPULATION			1961 POPULATION			1966 POPULATION			CHANGE IN TOTAL POPULATION			
	Total No. (1)	Male No. (2)	Female No. (3)	Total No. (4)	Male No. (5)	Female No. (6)	Total No. (7)	Male No. (8)	Female No. (9)	Absolute No. (10)	% (11)	Absolute No. (12)	% (13)
CITIES													
Guelph	27,386	13,085	14,301	39,838	19,325	20,513	51,377	25,546	25,831	23,991	87.6	11,539	29.0
TOWNS													
Fergus ^a	3,387	1,605	1,782	3,831	1,822	2,009	4,376	2,097	2,279	989	29.2	545	14.2
Harriston	1,494	744	750	1,631	797	834	1,748	854	894	254	17.0	117	7.2
Mount Forest	2,291	1,047	1,244	2,623	1,253	1,370	2,859	1,352	1,507	568	24.8	236	9.0
Palmerston	1,573	759	814	1,554	755	799	1,631	804	827	58	3.7	77	5.0
VILLAGES													
Arthur	1,088	522	566	1,200	588	612	1,242	616	626	154	14.2	42	3.5
Clifford	510	245	265	542	263	279	515	251	264	5	1.0	-27	-5.0
Dayton	541	230	311	646	310	336	677	341	336	136	25.1	31	4.8
Elora	1,348	666	682	1,486	739	747	1,644	802	842	296	22.0	158	10.6
Erin	650	323	327	1,005	496	509	1,195	592	603	545	83.8	190	18.9
TOWNSHIPS													
Arthur	1,628	900	728	1,717	930	787	1,668	889	779	40	2.5	-49	-2.9
Bramosa	2,495	1,265	1,230	3,093	1,632	1,461	3,190	1,697	1,493	695	27.9	97	3.1
Erin	2,635	1,413	1,222	3,272	1,719	1,553	3,430	1,829	1,601	795	30.2	158	4.8
Garratara, West	1,422	755	667	1,573	854	719	1,555	812	723	133	9.4	-18	-1.1
Guelph	4,771	2,937	1,834	5,636	3,404	2,232	2,307	1,249	1,058	-2,464	-51.6	-3,329	-59.1
Luther, West	1,224	650	574	1,252	648*	604	1,132	583	549	-92	-7.5	-120	-9.6
Maryborough	1,981	1,040	941	1,993	1,060	933	2,084	1,080	1,004	103	5.2	91	4.6
Minto	2,084	1,098	986	2,077	1,108	969	2,064	1,101	963	-20	-1.0	-13	-0.6
Nichol	1,606	848	758	1,925	1,008	917	2,126	1,111	1,015	520	32.4	201	10.4
Peel	2,751	1,480	1,271	2,988	1,585	1,403	3,087	1,612	1,475	336	12.2	99	3.3
Pikington	1,122	621	501	1,227	654	573	1,288	688	600	166	14.8	61	5.0
Puslinch	2,943	1,540	1,403	3,593	1,879	1,714	2,982	1,519	1,463	39	1.3	-611	-17.0
TOTAL, WELLINGTON COUNTY	66,930	33,773	33,157	84,702	42,829	41,873	94,177	47,445	46,732	27,247	40.7	9,475	11.2

^aFergus was classified as a village in 1951.Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 7, Table 7 and Table 9.

TABLE 3.

URBAN AND RURAL POPULATION DISTRIBUTION BY COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966

	POPULATION - 1956 DEFINITION				POPULATION - 1961 AND 1966 DEFINITIONS				PER CENT CHANGE	
	1951		1961		1961		1966		1961/1951	1966/1961
	No. (1)	% (2)	No. (3)	% (4)	No. (5)	% (6)	No. (7)	% (8)	Total (9)	Total (10)
WATERLOO										
Urban	99,161	78.6	160,382	90.7	147,983	83.7	186,922	86.2	61.7	26.3
Rural	26,962	21.4	16,372	9.3	28,771	16.3	29,806	13.8	-39.3	3.6
WELLINGTON										
Urban	41,568	62.1	55,097	65.0	55,097	65.0	66,072	70.2	32.5	19.9
Rural	25,362	37.9	29,605	35.0	29,605	35.0	28,105	29.8	16.7	-5.1
PERTH										
Urban	29,905	56.9	32,979	57.4	32,979	57.4	35,837	59.3	10.3	8.7
Rural	22,679	43.1	24,473	42.6	24,473	42.6	24,587	40.7	7.9	0.5
HURON										
Urban	14,788	30.0	18,126	33.7	18,126	33.7	22,366	41.1	22.6	23.4
Rural	34,492	70.0	35,679	66.3	35,679	66.3	32,080	58.9	3.4	-10.1
TOTAL, MIDWESTERN ONTARIO REGION										
Urban	185,422	62.9	266,584	71.5	254,185	68.2	311,197	73.1	43.8	22.4
Rural	109,495	37.1	106,129	28.5	118,528	31.8	114,578	26.9	-3.1	-3.3
TOTAL, PROVINCE OF ONTARIO										
Urban	3,375,825	73.4	4,941,228	79.2	4,823,529	77.3	5,593,440	80.4	46.4	16.0
Rural	1,221,717	26.6	1,294,864	20.8	1,412,563	22.7	1,367,430	19.6	6.0	-3.2

Definitions of Rural and Urban:1956: - All cities, towns and villages of 1,000 and over, whether incorporated or unincorporated, as well as all parts of Census Metropolitan areas were classified as urban, the remainder as rural.

1961 & 1966: - All cities, towns and villages of 1,000 and over, whether incorporated or not, were classed as urban, as well as the urbanized fringes of (a) cities classed as metropolitan areas, (b) those classed as other major urban areas, and (c) certain smaller cities, if the city together with its urbanized fringe was 10,000 population or over. The remainder of the population living outside these urban centres and suburban fringes is classed as rural.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966 (Ottawa: Queen's Printer), Table 13.

TABLE 4.

RURAL FARM AND RURAL NON-FARM POPULATION DISTRIBUTION, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1961 AND 1966

	1961 RURAL						1966 RURAL						PER CENT CHANGE		
	Farm			Non-Farm			Farm			Non-Farm			1966/1961		
	Total	% OF	Total	Total	% OF	Total	Total	% OF	Total	Total	% OF	Total	Farm	Non-Farm	
	No. (1)	No. (2)	Total (3)	No. (4)	Total (5)	No. (6)	No. (7)	Total (8)	No. (9)	Total (10)	Total (11)	Farm (12)	Non-Farm (13)		
HURON	35,679	19,639	55.0	16,040	45.0	32,080	19,314	60.2	12,766	39.8	-10.1	-1.7	-20.4		
PERTH	24,473	17,006	69.5	7,467	30.5	24,587	16,736	68.1	7,851	31.9	0.5	-1.6	5.1		
WATERLOO	28,771	11,522	40.0	17,249	60.0	29,806	11,437	38.4	18,369	61.6	3.6	-0.7	6.5		
WELLINGTON	29,605	17,198	58.1	12,407	41.9	28,105	15,848	56.4	12,257	43.6	-5.1	-7.8	-1.2		
TOTAL, MIDWESTERN ONTARIO REGION	118,528	65,365	55.1	53,163	44.9	114,578	63,335	55.3	51,243	44.7	-3.3	-3.1	-3.6		
TOTAL, PROVINCE OF ONTARIO	1,412,563	505,699	35.8	906,864	64.2	1,367,430	481,695	35.2	885,735	64.8	-3.2	-4.7	-2.3		

1 A "farm" for census purposes is defined as an agricultural holding of one or more acres with sales of agricultural products of \$50 or more in the previous year. All persons living on such holdings in rural areas are classed as "rural farm" regardless of their occupation.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1966, (Ottawa: Queen's Printer), #92-608, Table 13.

TABLE 4. a

RURAL FARM AND RURAL NON-FARM POPULATION DISTRIBUTION, HURON COUNTY, 1961 AND 1966

	1961 RURAL						1966 RURAL						PER CENT CHANGE			
	Total No. (1)	Farm		Non-Farm		Total No. (6)	Farm No. (7)	Non-Farm		Total No. (9)	1966/1961					
		No. (2)	% Of Total (3)	No. (4)	% Of Total (5)			Total No. (10)	Total (11)		Farm (12)	Non-Farm (13)				
VILLAGES ²																
Bayfield	-	-	-	-	464	8	1.7	456	98.3	-	-	-	-	-	-	
Blyth	724	50	6.9	674	799	63	7.9	736	92.1	10.4	26.0	9.2	-0.6	9.2	-	
Brussels	844	26	3.1	818	820	7	0.9	813	99.1	-2.8	-73.1	-0.6	-0.9	-0.9	-	
Hensall	926	-	-	926	934	-	-	934	100.0	0.9	-	-	-	-	-	
Zurich	723	-	-	723	737	19	2.6	718	97.4	1.9	-	-0.7	-0.7	-0.7	-	
TOWNSHIPS																
Ashfield	1,688	1,394	82.6	294	1,646	1,345	81.7	301	18.3	-2.5	-3.5	2.4	-2.7	2.4	-	
Colborne	1,233	745	60.4	488	1,257	756	60.1	501	39.9	1.9	1.5	2.7	-2.7	2.7	-	
Godewich	1,824	1,224	67.1	600	2,158	1,191	55.2	967	44.8	18.3	-2.7	61.2	-13.3	36.4	-	
Grey	1,909	1,563	81.9	346	1,827	1,355	74.2	472	25.8	-4.3	-9.7	11.9	-9.7	11.9	-	
Hay	2,002	1,437	71.8	565	1,929	1,297	67.2	632	32.8	-3.6	-9.7	11.9	-9.7	11.9	-	
Howick	2,758	1,704	61.8	1,054	2,811	1,810	64.4	1,001	35.6	1.9	6.2	-5.0	-5.0	-5.0	-	
Hullett	1,953	1,516	77.6	437	1,841	1,394	75.7	447	24.3	-5.7	-8.0	2.3	-8.0	2.3	-	
McKillop	1,610	1,268	78.8	342	1,569	1,259	80.2	310	19.8	-2.5	-0.7	-9.4	-0.7	-9.4	-	
Morris	1,585	1,202	75.8	383	1,520	1,138	74.9	382	25.1	-4.1	-5.3	-0.3	-5.3	-0.3	-	
Stanley	2,836	1,173	41.4	1,663	1,536	1,148	74.7	388	25.3	-45.8	-2.1	-76.7	-2.1	-76.7	-	
Stephen	4,545	1,375	30.3	3,170	2,659	1,445	54.3	1,214	45.7	-41.5	-3.1	-61.7	-3.1	-61.7	-	
Tuckermalth	3,217	1,268	39.4	1,949	2,325	1,201	51.7	1,124	48.3	-27.7	-5.3	-42.3	-5.3	-42.3	-	
Turnberry	1,406	794	56.5	612	1,381	992	71.8	389	28.2	-1.8	24.9	-36.4	-1.8	24.9	-	
Urborne	1,552	1,086	70.0	466	1,538	1,095	71.2	443	28.8	-0.9	0.8	-4.9	-0.9	-4.9	-	
Wawanosh, East	1,167	975	83.5	192	1,138	980	86.1	158	13.9	-2.5	0.5	-17.7	-2.5	0.5	-	
Wawanosh, West	1,177	839	71.3	338	1,191	811	68.1	380	31.9	1.2	-3.3	12.4	1.2	-3.3	-	
TOTAL, HURON COUNTY	35,679	19,639	55.0	16,040	45.0	32,080	19,314	60.2	12,766	39.8	-10.1	-1.7	-10.1	-1.7	-	

1a. "farm" for census purposes is defined as an agricultural holding of one or more acres with sales of agricultural products of \$50 or more in the previous year. All persons living on such holdings in rural areas are classed as "rural farm" regardless of their occupation.

2 incorporated January 1, 1965.

- N11

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966, Special Tabulation.

TABLE 4, b

RURAL FARM AND RURAL NON-FARM POPULATION DISTRIBUTION, PERTH COUNTY, 1961 AND 1966

	1961 RURAL					1966 RURAL					PER CENT CHANGE		
	Total No. (1)	Farm No. (2)	% Of Total (3)	Non-Farm No. (4)	% Of Total (5)	Total No. (6)	Farm No. (7)	% Of Total (8)	Non-Farm No. (9)	% Of Total (10)	Total (11)	Farm (12)	Non-Farm (13)
TOWNSHIPS													
Blanshard	1,991	1,390	69.8	601	30.2	1,917	1,453	75.8	464	24.2	-3.7	4.5	-22.8
Downie	2,595	1,584	61.0	1,011	39.0	2,429	1,655	68.1	774	31.9	-6.4	4.5	-23.4
Easthope, North	2,116	1,401	66.2	715	33.8	2,082	1,494	71.8	588	28.2	-1.6	6.6	-17.8
Easthope, South	1,646	1,010	61.4	636	38.6	1,721	983	57.1	738	42.9	4.6	-2.7	16.0
Ellice	2,704	1,886	69.7	818	30.3	2,703	1,712	63.3	991	36.7	x	-9.2	21.1
Elma	3,323	2,030	61.1	1,293	38.9	3,532	2,090	59.2	1,442	40.8	6.3	3.0	11.5
Fullarton	1,555	1,270	81.7	285	18.3	1,541	1,165	75.6	376	24.4	-0.9	-8.3	31.9
Hibbert	1,636	1,095	66.9	541	33.1	1,617	1,094	67.7	523	32.3	-1.2	-0.1	-3.3
Logan	2,262	1,746	77.2	516	22.8	2,270	1,714	75.5	556	24.5	0.4	-1.8	7.8
Mornington	2,509	1,828	72.9	681	27.1	2,596	1,794	69.1	802	30.9	3.5	-1.9	17.8
Wallace	2,136	1,766	82.7	370	17.3	2,179	1,582	72.6	597	27.4	2.0	-10.4	61.4
TOTAL, PERTH COUNTY	24,473	17,006	69.5	7,467	30.5	24,587	16,736	68.1	7,851	31.9	0.5	-1.6	5.1

1. "Farm" for census purposes is defined as an agricultural holding of one or more acres with sales of agricultural products of \$50 or more in the previous year. All persons living on such holdings in rural areas are classed as "rural farm" regardless of their occupation.

x Less than 0.05 per cent.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966, Special Tabulation.

TABLE 4.c

RURAL FARM AND RURAL NON-FARM POPULATION DISTRIBUTION, WATERLOO COUNTY, 1961 AND 1966

	1961 RURAL					1966 RURAL					PER CENT CHANGE		
	Total No. (1)	Farm No. (2)	% OF Total (3)	Non-Farm No. (4)	% OF Total (5)	Total No. (6)	Farm No. (7)	% OF Total (8)	Non-Farm No. (9)	% OF Total (10)	Total (11)	Farm (12)	Non-Farm (13)
VILLAGES													
Wellesley ²	-	-	-	-	-	659	22	3.3	637	96.7	-	-	-
TOWNSHIPS													
Dumfries ³	3,399	1,010	29.7	2,389	70.3	3,696	965	26.1	2,731	73.9	8.7	-4.5	14.3
Waterloo ³	9,000	2,390	26.6	6,610	73.4	9,183	2,344	25.5	6,839	74.5	2.0	-1.9	3.5
Wellesley	5,166	2,953	57.2	2,213	42.8	4,889	2,782	56.9	2,107	43.1	-5.4	-5.8	-4.8
Wilmot	5,716	2,694	43.6	3,220	56.4	5,356	2,547	47.6	2,809	52.4	-6.3	2.1	-12.8
Woolwich	5,492	2,675	48.7	2,817	51.3	6,023	2,777	46.1	3,246	53.9	9.7	3.8	15.2
TOTAL, WATERLOO COUNTY	28,771	11,522	40.0	17,249	60.0	29,806	11,437	38.4	18,369	61.6	3.6	-0.7	6.5

¹ A "farm" for census purposes is defined as an agricultural holding of one or more acres with sales of agricultural products of \$50 or more in the previous year. All persons living on such holdings in rural areas are classed as "rural farm" regardless of their occupation.

² Incorporated January 1, 1962.

³ Included in Kitchener Census Metropolitan Area.

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966, Special Tabulation.

TABLE 4.d

RURAL FARM AND RURAL NON-FARM POPULATION DISTRIBUTION, WELLINGTON COUNTY, 1961 AND 1966

	1961 RURAL					1966 RURAL					PER CENT CHANGE		
	Total No. (1)	Farm		Non-Farm		Total No. (6)	Farm		Non-Farm		Total (11)	Farm 1966/1961 (12)	Non-Farm (13)
		No. (2)	% Of Total (3)	No. (4)	% Of Total (5)		No. (7)	% Of Total (8)	No. (9)	% Of Total (10)			
VILLAGES													
Clifford	542	28	5.2	514	94.8	515	43	8.3	472	91.7	-5.0	53.6	-8.2
Drayton	646	97	15.0	549	85.0	677	49	7.2	628	92.8	4.8	-49.5	14.4
TOWNSHIPS													
Arthur	1,717	1,492	86.9	225	13.1	1,668	1,426	85.5	242	14.5	-2.9	-4.4	7.6
Eramosa	3,093	1,400	45.3	1,693	54.7	3,190	1,235	38.7	1,955	61.3	-11.8	-11.8	15.5
Erin	3,272	1,816	55.5	1,456	44.5	3,430	1,678	48.9	1,752	51.1	4.8	-7.6	20.3
Garafaxa, West	1,573	1,063	67.6	510	32.4	1,555	960	61.7	595	38.3	-1.1	-9.7	16.7
Guelph (rural part)	3,707	1,040	28.1	2,667	71.9	2,307	916	39.7	1,391	60.3	-37.8	-11.9	-47.8
Luther, West	1,252	1,082	86.4	170	13.6	1,132	946	83.6	186	16.4	-9.6	-12.6	9.4
Marvborough	1,993	1,544	77.5	449	22.5	2,084	1,450	69.6	634	30.4	4.6	-6.1	41.2
Minto	2,077	1,756	84.5	321	15.5	2,064	1,850	89.6	214	10.4	-0.6	5.4	-33.3
Nichol	1,925	1,012	52.6	913	47.4	2,126	789	37.1	1,337	62.9	10.4	-22.0	46.4
Peel	2,988	2,438	81.6	550	18.4	3,087	2,473	80.1	614	19.9	3.3	1.4	11.6
Pikington	1,227	922	75.1	305	24.9	1,288	959	74.5	329	25.5	5.0	4.0	7.9
Puslinch	3,593	1,508	42.0	2,085	58.0	2,982	1,074	36.0	1,908	64.0	-17.0	-28.8	-8.5
TOTAL, WELLINGTON COUNTY	29,605	17,198	58.1	12,407	41.9	28,105	15,848	56.4	12,257	43.6	-5.1	-7.8	-1.2

1a "farm" for census purposes is defined as an agricultural holding of one or more acres with sales of agricultural products of \$50 or more in the previous year. All persons living on such holdings in rural areas are classed as "rural farm" regardless of their occupation.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966, Special Tabulation.

TABLE 5.

POPULATION DENSITY BY COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966

	Land Area (Sq. Miles) (1)	1951		1961		1966	
		Total Population No. (2)	Density (Pop. per sq. mi.) (3)	Total Population No. (4)	Density (Pop. per sq. mi.) (5)	Total Population No. (6)	Density (Pop. per sq. mi.) (7)
HURON	1,295	49,280	38.1	53,805	41.6	54,446	42.0
PERTH	840	52,584	62.6	57,452	68.4	60,424	72.0
WATERLOO	516	126,123	244.4	176,754	342.6	216,728	420.0
WELLINGTON	1,019	66,930	65.7	84,702	83.1	94,177	92.4
TOTAL, MIDWESTERN ONTARIO REGION	3,670	294,917	80.4	372,713	101.6	452,775	116.0
TOTAL, PROVINCE OF ONTARIO	344,092	4,597,542	13.4 ¹	6,236,092	18.1	6,960,870	20.2

Note: 1966 Densities and all Regional Densities calculated by the Ontario Department of Treasury and Economics, Regional Development Branch.
¹Revised

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 2, Table 2 and Table 9.

TABLE 5. a

POPULATION DENSITY (PERSONS PER SQUARE MILE), HURON COUNTY, TOWNS, VILLAGES AND TOWNSHIPS, 1951, 1961 AND 1966

	1951		1961		1966	
	Population Total (1)	Density (2)	Population Total (3)	Density (4)	Population Total (5)	Density (6)
TOWNS						
Clinton	2,547	1,819	3,491	2,182	3,280	2,050
Exeter	2,547	1,415	3,047	1,604	3,226	1,698
Goderich	4,934	3,289	6,411	3,206	6,710	2,796
Seaforth	2,118	2,648	2,255	2,506	2,241	2,490
Wingham	2,642	2,642	2,922	2,922	2,974	2,974
VILLAGES						
Bayfield	-	-	-	-	464	516
Blyth	665	950	724	1,034	799	1,141
Brussels	813	1,355	844	1,407	820	1,367
Hensall	713	2,377	926	3,087	934	3,113
Zurich	-	-	723	2,410	737	2,457
TOWNSHIPS						
Ashfield	1,704	17	1,688	17	1,646	16
Colborne	1,136	21	1,233	23	1,257	23
Goderich	1,608	19	1,824	22	2,158	26
Grey	1,967	19	1,909	19	1,827	18
Hay	2,641	31	2,002	23	1,929	22
Howick	2,859	27	2,758	25	2,811	26
Hullett	1,855	22	1,953	23	1,841	22
McKillop	1,718	21	1,610	20	1,569	19
Morris	1,675	19	1,585	18	1,520	18
Stanley	1,950	27	2,049	29	1,536	21
Stephen	4,561	51	4,545	51	4,877	55
Tuckersmith	3,280	51	4,004	63	4,042	63
Turnberry	1,381	25	1,406	25	1,381	26
Usborne	1,667	24	1,552	23	1,538	23
Wawanosh, East	1,109	17	1,167	18	1,138	18
Wawanosh, West	1,190	18	1,177	18	1,191	18
TOTAL, HURON COUNTY	49,280	38	53,805	42	54,446	42

- Nil

Sources:

Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966, (Ottawa: Queen's Printer), Table 6, Table 7 and Table 9.

Ontario, Department of Municipal Affairs, Assessment Records.

TABLE 5.b

POPULATION DENSITY (PERSONS PER SQUARE MILE), PERTH COUNTY, CITIES, TOWNS, VILLAGES AND TOWNSHIPS, 1951, 1961 AND 1966

	1951		1961		1966	
	Population Total (1)	Density (2)	Population Total (3)	Density (4)	Population Total (5)	Density (6)
CITIES						
Stratford	18,785	4,269	20,467	4,013	23,068	3,035
TOWNS						
Listowel	3,469	2,041	4,002	2,354	4,526	2,662
Mitchell	1,979	900	2,247	1,021	2,371	1,078
St. Mary's	3,995	888	4,482	996	4,750	1,056
VILLAGES						
Milverton	1,055	1,507	1,111	1,587	1,122	1,603
Tavistock	622	-	670	-	-	-
TOWNSHIPS						
Blanshard	1,828	25	1,991	27	1,917	27
Downie	2,326	30	2,595	35	2,429	33
Easthope, North	1,792	27	2,116	31	2,082	31
Easthope, South	1,371	36	1,646	45	1,721	45
Ellice	2,290	26	2,704	32	2,703	32
Elma	3,291	31	3,323	31	3,532	34
Fullarton	1,548	24	1,555	25	1,541	25
Hibbert	1,562	24	1,636	25	1,617	25
Logan	2,233	26	2,262	26	2,270	26
Mornington	2,413	30	2,509	32	2,596	33
Wallace	2,025	25	2,136	27	2,179	28
TOTAL, PERTH COUNTY	52,584	63	57,452	68	60,424	72

- Nil

Sources: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966, (Ottawa: Queen's Printer), Table 6, Table 7 and Table 9.

Ontario, Department of Municipal Affairs, Assessment Records.

TABLE 5.c

POPULATION DENSITY (PERSONS PER SQUARE MILE), WATERLOO COUNTY, CITIES, TOWNS, VILLAGES AND TOWNSHIPS, 1951, 1961 AND 1966

	1951		1961		1966	
	Population Total (1)	Density (2)	Population Total (3)	Density (4)	Population Total (5)	Density (6)
CITIES						
Galt	19,207	4,467	27,830	2,141	33,491	2,557
Kitchener	44,867	4,116	74,485	4,185	93,255	4,126
Waterloo	11,991	2,607	21,366	2,574	29,889	2,599
TOWNS						
Elmira	2,589	3,236	3,337	3,034	4,047	2,891
Hespeler	3,862	4,291	4,519	3,013	5,381	3,363
New Hamburg	1,738	1,159	2,181	1,091	2,438	1,354
Preston	7,619	2,309	11,577	2,315	13,380	2,676
VILLAGES						
Ayr	931	1,164	1,016	1,270	1,134	1,418
Bridgeport	1,137	1,895	1,672	2,389	2,111	3,016
Wellesley	-	-	-	-	659	824
TOWNSHIPS						
Dumfries, North	4,178	624	3,399	53	3,696	56
Waterloo	13,682	113	9,000	85	9,938	101
Wellesley	4,679	46	5,166	52	4,889	47
Wilmot	4,865	51	5,714	60	6,397	67
Woolwich	4,778	56	5,492	65	6,023	72
TOTAL, WATERLOO COUNTY	126,123	244	176,754	343	216,728	420

- Nil

Sources: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966, (Ottawa: Queen's Printer), Table 6, Table 7 and Table 9.

TABLE 5.d

POPULATION DENSITY (PERSONS PER SQUARE MILE), WELLINGTON COUNTY, CITIES, TOWNS, VILLAGES AND TOWNSHIPS, 1951, 1961 AND 1966

	1951		1961		1966	
	Population Total (1)	Density (2)	Population Total (3)	Density (4)	Population Total (5)	Density (6)
CITIES						
Guelpb	27,386	5,827	39,838	4,527	51,377	5,466
TOWNS						
Fergus	3,387	2,419	3,831	2,736	4,376	2,735
Harrison	1,494	1,868	1,631	2,039	1,748	2,913
Mount Forest	2,291	1,041	2,623	1,192	2,859	1,300
Palmerston	1,573	1,430	1,554	1,413	1,631	1,483
VILLAGES						
Arthur	1,088	680	1,200	750	1,242	776
Clifford	510	729	542	774	515	736
Drayton	541	773	646	923	677	967
Elora	1,348	2,247	1,486	2,477	1,644	2,740
Erin	650	813	1,005	1,256	1,195	1,494
TOWNSHIPS						
Arthur	1,628	16	1,717	17	1,668	17
Eramosa	2,495	35	3,093	43	3,190	44
Erin	2,635	24	3,272	30	3,430	31
Garafraxa, West	1,422	19	1,573	21	1,555	20
Guelpb	4,771	82	5,636	104	2,307	53
Luther, West	1,224	16	1,252	16	1,132	15
Maryborough	1,981	23	1,993	23	2,084	24
Minto	2,084	19	2,077	19	2,064	19
Nichol	1,606	38	1,925	45	2,126	50
Peel	2,751	24	2,988	26	3,087	25
Pilkingtton	1,122	25	1,227	26	1,288	27
Puslinch	2,943	32	3,593	38	2,982	35
TOTAL, WELLINGTON COUNTY	66,930	66	84,702	83	94,177	92

Sources: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966, (Ottawa: Queen's Printer), Table 6, Table 7 and Table 9.
Ontario, Department of Municipal Affairs, Assessment Records.

TABLE 6.

NUMBER OF FAMILIES, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966

	1951			1961			1966					
	Total Families (1)	Number Of Persons In Families (2)	Average Number Of Persons Per Family (3)	Total Families (4)	Number Of Persons In Families (5)	Average Number Of Persons Per Family (6)	Total Families (7)	Number Of Persons In Families (8)	Average Number Of Persons Per Family (9)	Per Cent Change In Number Of Families 1966/1951 (10)	Per Cent Change In Average Number Of Persons Per Family 1966/1951 (12)	Per Cent Change In Average Number Of Persons Per Family 1966/1961 (13)
HURON	12,100	41,985	3.5	12,630	47,444	3.8	12,542	47,881	3.8	3.7	-0.7	8.6
PERTH	13,609	46,067	3.4	14,102	51,281	3.6	14,454	53,845	3.7	6.2	2.5	8.8
WATERLOO	32,618	109,892	3.4	43,461	157,842	3.6	51,962	193,561	3.7	59.3	19.6	8.8
WELLINGTON	16,049	57,107	3.4	20,222	74,672	3.7	22,012	83,457	3.8	32.2	8.9	11.8
TOTAL, MIDWESTERN ONTARIO REGION	74,976	255,961	3.4	90,415	331,239	3.7	100,970	378,744	3.8	34.7	11.7	11.8
TOTAL, PROVINCE OF ONTARIO	1,162,772	3,941,473	3.4	1,511,478	5,496,900	3.6	1,657,933	6,156,692	3.7	42.6	9.7	8.8
												2.8

- Nil

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 128, Table 45 and Table 2, (Advance Bulletin A-101).

TABLE 7.

POPULATION FIVE YEARS OF AGE AND OVER, NOT ATTENDING SCHOOL, BY YEARS OF SCHOOLING, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951 AND 1961

	POPULATION 5 YEARS AND OVER					YEARS OF SCHOOLING				
	Total (1)	Not Attending School ^a (2)	None ^b				13 + (6)			
			(3)	1-8 (4)	9-12 (5)					
HURON	1951	43,482	35,265	1,333	19,364	11,665	2,903			
	%	-	100.0	3.8	54.9	33.1	8.2			
	1961	47,614	35,146	1,823	16,504	13,586	3,233			
	%	-	100.0	5.2	47.0	38.7	9.2			
% Change 1961/1951	9.5	-0.3	36.8	-14.8	16.5	11.4				
PERTH	1951	46,857	38,228	1,313	22,380	11,613	2,922			
	%	-	100.0	3.4	58.5	30.4	7.7			
	1961	51,204	38,951	1,798	19,512	13,995	3,646			
	%	-	100.0	4.6	50.1	35.9	9.5			
% Change 1961/1951	9.3	1.9	36.9	-12.8	20.5	24.8				
WATERLOO	1951	111,718	92,774	3,532	49,950	31,761	7,531			
	%	-	100.0	3.8	53.9	34.2	8.1			
	1961	155,645	117,127	6,544	54,360	43,604	12,619			
	%	-	100.0	5.6	46.4	37.2	10.8			
% Change 1961/1951	39.3	26.2	85.3	8.8	37.3	67.6				
WELLINGTON	1951	59,568	48,219	1,677	24,312	17,616	4,614			
	%	-	100.0	3.5	50.4	36.5	9.6			
	1961	74,822	56,081	2,954	25,082	21,254	6,791			
	%	-	100.0	5.3	44.7	37.9	12.1			
% Change 1961/1951	25.6	16.3	76.2	3.2	20.7	47.2				
TOTAL, MIDWESTERN ONTARIO REGION	1951	261,625	214,486	7,855	116,006	72,655	17,970			
	%	-	100.0	3.6	54.1	33.9	8.4			
	1961	329,285	247,305	13,119	115,458	92,439	26,289			
	%	-	100.0	5.3	46.7	37.4	10.6			
% Change 1961/1951	25.9	15.3	67.0	-0.5	27.2	46.3				
TOTAL, PROVINCE OF ONTARIO	1951	4,082,820	3,331,421	157,522	1,534,048	1,274,945	364,906			
	%	-	100.0	4.7	46.0	38.3	11.0			
	1961	5,495,899	4,123,114	250,328	1,685,916	1,614,214	572,656			
	%	-	100.0	6.1	40.9	39.2	13.9			
% Change 1961/1951	34.6	23.8	58.9	9.9	26.6	56.9				

-Nil

^aIncludes those attending kindergarten
^bIncludes those now attending kindergarten and those who attended kindergarten only.

Source: Canada, Dominion Bureau of Statistics, Census of Population, 1951 and 1961 (Ottawa: Queen's Printer, 1961 and 1966), Table 13.

TABLE 8.

NATURAL POPULATION INCREASE AND NET MIGRATION, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951 TO 1966

	POPULATION		ACTUAL INCREASE			NATURAL INCREASE			NET MIGRATION					
	1951 No. (1)	1966 No. (3)	1966/1951 No. (4)	% ^a (5)	1966/1961 No. (6)	% ^b (7)	1966/1951 No. (8)	% ^a (9)	1966/1951 No. (10)	% ^b (11)	1966/1951 No. (12)	% ^a (13)	1966/1961 No. (14)	% ^b (15)
HURON	49,280	54,446	5,166	10.5	641	1.2	9,786	19.9	2,745	5.1	-4,620	-9.4	-2,104	-3.9
PERTH	52,584	60,424	7,840	14.9	2,972	5.2	9,788	18.6	3,165	5.5	-1,948	-3.7	-193	-0.3
WATERLOO	126,123	216,728	90,605	71.8	39,974	22.6	43,888	34.8	16,429	9.3	46,717	37.0	23,545	13.3
WELLINGTON	66,930	94,177	27,247	40.7	9,475	11.2	17,414	26.0	5,922	7.0	9,833	14.7	3,553	4.2
TOTAL, MIDWESTERN ONTARIO REGION	294,917	425,775	130,858	44.4	53,062	14.2	80,876	27.4	28,261	7.6	49,982	16.9	24,801	6.7
TOTAL, PROVINCE OF ONTARIO	4,597,542	6,960,870	2,363,328	51.4	724,778	11.6	1,441,345	31.4	487,852	7.8	921,983	20.1	236,926	3.8

^aPer cent of 1951 population.^bPer cent of 1961 population.Source: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1961 and 1966, (Ottawa: Queen's Printer), Volume 7.1, Table 2 and Special Tabulation.

TABLE 9.

AVERAGE INCOME PER TAXPAYER, SELECTED LOCALITIES, COUNTIES, MIDWESTERN ONTARIO REGION
AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966

	AVERAGE INCOME PER TAXPAYER			% CHANGE	
	1951	1961	1966	1966/1951	1966/1961
	\$ (1)	\$ (2)	\$ (3)	(4)	(5)
HURON	2,717	3,643	4,429	63.0	21.6
PERTH	2,927	3,946	4,704	60.7	19.2
Stratford	3,021	4,097	4,896	62.1	19.5
WATERLOO	2,925	4,168	5,027	71.9	20.6
Galt	2,910	4,007	4,820	65.6	20.3
Kitchener and Waterloo	3,017	4,227	5,104	69.2	20.7
WELLINGTON	2,893	4,093	4,869	68.3	19.0
Guelph	2,889	4,232	5,087	76.1	20.2
TOTAL, MIDWESTERN ONTARIO REGION	2,906	4,078	4,903	68.7	20.2
TOTAL, PROVINCE OF ONTARIO	3,163	4,498	5,398	70.7	20.0

Source: Department of National Revenue, Taxation Division, Taxation Statistics, 1953, 1963 and 1968, Table 5, Table 5 and Table 6.

TABLE 10.

AVERAGE PERSONAL INCOME BY COUNTIES, MIDWESTERN ONTARIO REGION AND
PROVINCE OF ONTARIO, 1961 AND 1966

	AVERAGE PERSONAL INCOME		
	1961	1966	% Change
	\$	\$	1966/1961
	(1)	(2)	(3)
HURON	2,733	3,599	31.69
PERTH	3,156	3,981	26.14
WATERLOO	3,610	4,349	20.47
WELLINGTON	3,254	4,081	25.41
TOTAL, PROVINCE OF ONTARIO	3,825	4,686	22.51

Source: Taxation Statistics, Department of National Revenue, Taxation,
1963 and 1968, Table 5 and Table 6.

TABLE 11.

PER CAPITA AND PER HOUSEHOLD INCOME, COUNTIES, CITIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966

		POPULATION ESTIMATES			EFFECTIVE BUYING INCOME ^c					DISTRIBUTION OF HOUSEHOLD INCOME ^f					
		Total ^a Households ^b (1) as % of			Net Dollars ^c ('000's)	% of Region (5)	Per Capita \$ (6)	Per Household \$ (7)	A % (8)	B % (9)	C % (10)	D % (11)	E % (12)		
		(1)	(2)	(3)											
HURON	1951	49.6	14.5	16.6	40,433	11.8	815	2,788	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	54.0	14.8	14.3	65,904	11.8	1,220	4,453	31.9	27.5	31.2	7.9	1.5		
	1966	55.1	15.3	12.8	90,833	10.7	1,649	5,937	24.6	25.3	33.9	10.5	5.7		
	% Change 1966/1951	11.1	5.5		124.7		102.3	112.9							
	% Change 1966/1961	2.0	3.4		37.8		35.2	33.3							
PERTH	1-51	53.1	15.8	17.8	62,368	18.3	1,172	3,947	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	57.8	16.1	15.3	80,660	14.5	1,396	5,010	22.4	25.0	40.4	9.6	2.6		
	1966	60.8	17.0	14.1	111,155	13.1	1,828	6,539	17.6	23.6	38.2	12.9	7.7		
	% Change 1966/1951	14.3	7.6		78.2		56.0	65.7							
	% Change 1966/1961	5.2	5.6		37.8		30.9	30.5							
Stratford	1951	19.0	5.8	6.4	27,965	8.2	1,472	4,822	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	20.6	6.0	5.5	33,816	6.1	1,642	5,636	14.5	22.4	47.2	11.9	4.0		
	1966	23.0	6.7	5.3	48,494	5.7	2,108	7,238	12.1	21.9	40.9	15.0	10.1		
	% Change 1966/1951	21.1	15.5		73.4		43.2	50.1							
	% Change 1966/1961	11.7	11.7		43.4		28.4	28.4							
WATERLOO	1951	127.8	37.1	42.8	160,217	46.9	1,254	4,319	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	180.1	47.6	47.7	282,823	50.7	1,570	5,942	16.1	22.3	44.3	11.8	5.5		
	1966	230.5	59.7	51.1	453,986	53.4	2,059	7,805	13.0	21.7	39.2	14.5	11.6		
	% Change 1966/1951	72.5	60.9		182.4		64.2	76.1							
	% Change 1966/1961	22.4	25.4		60.5		31.1	28.0							
Galt	1951	19.4	6.0	6.5	27,044	7.9	1,394	4,507	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	28.3	7.9	7.5	46,833	8.4	1,655	5,928	15.5	22.2	45.0	11.8	5.5		
	1966	33.6	9.7	7.8	72,880	8.6	2,169	7,513	12.8	21.7	39.6	14.5	11.4		
	% Change 1966/1951	73.2	61.7		169.5		55.6	66.7							
	% Change 1966/1961	18.7	22.8		55.6		31.1	26.7							
Kitchener	1951	45.5	13.4	15.3	60,620	17.8	1,332	4,524	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	75.9	20.5	20.1	126,650	22.7	1,669	6,178	14.5	21.4	45.1	12.9	6.1		
	1966	94.9	26.4	22.0	206,923	24.3	2,180	7,838	12.0	21.1	39.3	15.1	12.5		
	% Change 1966/1951	108.6	97.0		241.3		63.7	73.3							
	% Change 1966/1961	25.0	28.8		63.4		30.6	26.9							
Waterloo	1951	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	21.8	5.6	5.8	38,882	7.0	1,784	6,943	11.4	19.6	45.1	13.7	10.2		
	1966	30.5	8.1	7.1	68,918	8.1	2,260	8,508	9.7	19.6	38.5	15.4	16.8		
	% Change 1966/1951	n.a.	n.a.		n.a.		n.a.	n.a.							
	% Change 1966/1961	39.9	44.6		77.2		26.7	22.5							
WELLINGTON	1951	67.7	19.0	22.7	78,415	23.0	1,158	4,127	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	85.7	22.9	22.7	128,423	23.0	1,499	5,608	21.4	23.9	39.8	11.3	3.6		
	1966	94.9	25.5	22.0	194,829	22.9	2,053	7,640	16.5	22.6	37.6	13.7	9.6		
	% Change 1966/1951	40.2	34.2		148.5		77.3	85.1							
	% Change 1966/1961	10.7	11.4		51.7		37.0	36.2							
Guelph	1951	27.6	8.1	9.3	36,142	10.6	1,309	4,462	n.a.	n.a.	n.a.	n.a.	n.a.		
	1961	40.3	10.9	10.7	70,428	12.6	1,748	6,461	15.9	21.8	43.6	12.5	6.2		
	1966	51.4	14.0	11.9	117,778	13.8	2,291	8,413	13.0	21.3	38.6	14.7	12.4		
	% Change 1966/1951	86.2	72.8		225.9		75.0	88.5							
	% Change 1966/1961	27.5	28.4		67.2		31.1	30.2							
MIDWESTERN ONTARIO REGION	1951	298.3	86.4	100.0	341,433	100.0	1,145	3,952							
	1961	377.6	101.4	100.0	557,810	100.0	1,477	5,501							
	1966	431.3	117.5	100.0	850,813	100.0	1,973	7,241							
	% Change 1966/1951	44.6	36.0		149.2		72.3	83.2							
	% Change 1966/1961	14.2	15.9		52.5		33.6	31.6							

TABLE 11.

PER CAPITA AND PER HOUSEHOLD INCOME, COUNTIES, CITIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951, 1961 AND 1966 (continued)

	POPULATION ESTIMATES			EFFECTIVE BUYING INCOME ^c			DISTRIBUTION OF HOUSEHOLD INCOME ^f					
	Total (⁰⁰⁰ 's)	Households ^b (1) as % of (⁰⁰⁰ 's)	Region (3)	Net Dollars ^c (⁰⁰⁰ 's)	% Of Region (5)	per	per	A %	B %	C %	D %	E %
						Capita	Household ^e					
						\$	\$					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
TOTAL, PROVINCE OF ONTARIO												
1951	4 635.5	1,320.7		6,333,714		1,366	4,796	n.a.	n.a.	n.a.	n.a.	n.a.
1961	6,332.0	1,625.9		10,157,578		1,604	6,247	17.6	20.9	39.9	15.2	6.4
1966	7,035.6	1,868.4		14,891,868		2,117	7,970	13.7	20.4	36.6	15.7	13.6
% Change 1966/1951	51.8	41.5		135.1		55.0	66.2					
% Change 1966/1961	11.1	14.9		46.6		32.0	27.6					

n.a. Not available

a Population estimated as of December 31 of each year.

b Includes all persons occupying a house, apartment, or other group of rooms, or a room that constitutes "separate living quarters", as well as unrelated persons lodging, servants, hired hands) who share living quarters; also a person living alone, or a group of unrelated persons sharing the same living quarters.

c Effective Buying Income, or disposable income, includes wages, salaries, dividends, entrepreneurial and farm income imputed rentals - less income taxes.

d Per Capita Income is Net Effective Buying Income divided by Total Population.

e Per Household Income is Net Effective Buying Income divided by Total Households.

f 1959 - 1965: A = \$0 - 2,499; B = \$2,500 - 3,999; C = \$4,000 - 6,999; D = \$7,000 - 9,999; E = \$10,000 and over.

1966: A = \$0 - 2,999; B = \$3,000 - 4,999; C = \$5,000 - 7,999; D = \$8,000 - 9,999; E = \$10,000 and over.

Source: Sales Management Magazine, 1952, 1962 and 1967.

TABLE 12

INCOME DATA, AVERAGE INCOME AND DISTRIBUTION, COUNTIES, MIDWESTERN ONTARIO REGION AND SELECTED CENTRES, 1966

	Taxable Returns		Non-Taxable Returns		Average Income Per Taxpayer (5)	Average Income Per Non-Taxpayer (6)	Average Personal Income (7)
	No. of Taxpayers (1)	Total Income (\$000's) (2)	Total No. (3)	Total Income (000's) (4)			
HURON	13,181	58,384	4,342	4,686	4,429	1,079	3,599
PERTH*	8,925	40,011	3,051	3,841	4,483	1,259	3,661
Stratford	10,276	50,315	1,969	2,260	4,896	1,147	4,294
TOTAL, PERTH COUNTY	19,201	90,326	5,020	6,101	4,704	1,215	3,981
WATERLOO*	7,246	34,386	2,401	2,395	4,746	998	3,813
Kitchener-Waterloo	67,549	344,759	12,573	10,913	5,104	868	4,439
Galt	15,136	72,957	2,613	2,157	4,820	825	4,232
TOTAL, WATERLOO COUNTY	89,931	452,102	17,587	15,465	5,027	879	4,349
WELLINGTON*	11,360	50,464	3,774	3,879	4,443	1,028	3,591
Guelph	22,170	112,788	4,519	3,556	5,087	787	4,359
TOTAL, WELLINGTON COUNTY	33,530	163,257	8,293	7,435	4,869	897	4,081
TOTAL, MIDWESTERN ONTARIO	155,843	764,069	35,242	33,687	4,903	956	4,175
TOTAL, PROVINCE OF ONTARIO	2,564,529	13,843,653	494,278	490,852	5,398		4,686

*Does not include selected urban centres shown separately.

Source: Department of National Revenue - Taxation.

TABLE 12.

INCOME DISTRIBUTION FOR ALL RETURNS

	Less than \$2,000 (8)	2,000- 3,000 (9)	3,000- 4,000 (10)	4,000- 5,000 (11)	5,000- 7,000 (12)	7,000- 10,000 (13)	10,000- 20,000 (14)	20,000+ (15)
HURON	5,033 28.7	3,259 18.6	3,472 19.8	2,208 12.6	2,247 12.8	770 4.4	449 2.6	85 0.5
PERTH*	3,475 29.0	2,471 20.6	1,602 13.4	1,643 13.7	1,789 14.9	644 5.4	296 2.4	56 0.6
Stratford	2,684 22.0	1,929 15.7	2,155 17.6	1,790 14.6	2,315 18.9	880 7.2	390 3.2	102 0.8
TOTAL, PERTH COUNTY	5,159 25.4	4,400 18.2	3,757 15.5	3,433 14.2	4,104 16.9	1,524 6.3	686 2.8	158 0.7
WATERLOO*	2,817 29.2	1,575 16.3	1,282 13.3	1,109 11.5	1,931 20.0	670 7.0	214 2.2	49 0.5
Kitchener-Waterloo	19,295 24.1	11,470 14.3	10,810 13.5	11,159 13.9	16,595 20.7	7,142 8.9	2,928 3.7	723 0.9
Galt	4,422 24.9	2,477 14.6	2,603 14.7	2,460 13.9	3,822 21.5	1,267 7.1	569 3.2	129 0.7
TOTAL, WATERLOO COUNTY	26,534 24.7	15,522 14.4	14,695 13.7	14,728 13.7	22,348 20.8	9,079 8.4	3,711 3.5	901 0.8
WELLINGTON*	4,319 26.9	2,944 19.4	2,245 14.8	1,722 11.4	2,762 18.3	842 5.6	244 1.6	56 0.4
Guelph	7,182 26.9	3,559 13.3	3,711 13.9	3,414 12.8	4,997 18.7	2,392 9.0	1,232 4.6	202 0.8
TOTAL, WELLINGTON COUNTY	11,501 27.5	6,503 15.6	5,956 14.2	5,136 12.3	7,759 18.6	3,234 7.7	1,476 3.5	258 0.6
TOTAL, MIDWESTERN ONTARIO	49,227 25.8	29,684 15.5	27,880 14.6	25,505 13.4	36,458 19.1	14,607 7.6	6,322 3.3	1,402 0.7
TOTAL, PROVINCE OF ONTARIO	707,477 23.1	405,132 13.2	417,402 13.7	385,592 12.6	636,691 20.8	332,254 10.9	144,535 4.7	29,724 1.0

TABLE 13.

LABOUR FORCE BY INDUSTRY DIVISIONS, COUNTIES, MIDWESTERN ONTARIO REGION 1951 AND 1961

			Transportation, Communication, and Other Utilities										Community, Business, and Finance			Public Administration and Defence	Industry not Stated
			All Industries (1)	Agriculture (2)	Forestry (3)	Fishing and Trapping (4)	Mining, Quarries and Oil (5)	Manufacturing (6)	Construction (7)	Utilities and Other (8)	Trade (9)	Insurance and Real Estate (10)	Personal Service Industries (11)				
HURON	No.	18,807	7,827	11	34	14	2,126	1,080	801	1,905	238	4,463	n.a.	308			
	%	41.6	0.1	0.2	0.1	0.1	11.3	5.7	4.3	1.3	10.1	23.7	-	1.6			
	1961	19,933	6,787	18	43	181	2,320	1,018	1,187	2,235	350	2,549	2,982	263			
% Change 1961/1951		100.0	34.0	0.1	0.2	0.9	11.6	5.1	6.0	11.2	1.8	12.8	15.0	1.3			
		6.0	-13.3	63.6	26.5	1,192.9	9.1	-5.7	48.2	17.3	47.1	-42.9	-	-14.6			
		20,330	6,176	15	-	14	5,862	1,146	1,441	2,545	388	2,595	n.a.	148			
PERTH	No.	100.0	30.4	0.1	-	0.1	28.8	5.6	7.1	12.5	1.9	12.8	-	0.7			
	%	21,684	5,582	14	-	25	5,431	1,159	1,808	2,911	517	3,225	623	389			
	1961	100.0	25.7	0.1	-	0.1	25.0	5.3	8.3	13.4	2.4	14.9	2.9	1.8			
% Change 1961/1951		6.7	-9.6	-6.7	-	78.6	7.4	1.1	25.5	14.4	33.2	24.3	-	162.8			
		56,043	3,939	19	2	32	30,021	3,281	2,558	6,727	2,069	7,115	n.a.	280			
	%	100.0	7.0	x	x	0.1	53.6	5.8	4.6	12.0	3.7	12.7	-	0.5			
WATERLOO	No.	72,675	3,753	15	-	60	31,764	4,795	3,458	10,906	3,308	11,435	2,118	1,063			
	%	100.0	5.2	x	-	0.1	43.7	6.6	4.5	15.0	4.5	15.7	2.9	1.5			
	1961	29.7	-4.7	-21.1	-	87.5	5.8	46.1	35.2	62.1	59.9	60.7	-	279.6			
% Change 1961/1951		26,720	6,079	20	2	38	9,239	1,444	1,447	3,131	496	4,633	n.a.	191			
	No.	100.0	22.8	0.1	x	0.1	34.6	5.4	5.4	11.7	1.9	17.3	-	0.7			
	1961	31,997	5,254	12	-	82	9,607	1,902	1,667	4,162	782	6,565	1,387	577			
WELLINGTON	No.	100.0	16.4	x	-	0.3	30.0	6.0	5.2	13.0	2.5	20.5	4.3	1.8			
	%	19.7	-13.6	-40.0	-	115.8	4.0	31.7	15.2	32.9	57.7	41.7	-	202.1			
	1961/1951																
TOTAL, MIDWESTERN ONTARIO REGION	No.	121,900	24,021	65	38	98	47,248	6,951	6,247	14,308	3,191	18,806	n.a.	927			
	%	100.0	19.7	0.1	x	0.1	38.8	5.7	5.1	11.7	2.6	15.4	-	0.8			
	1961	146,289	21,376	59	43	348	49,122	8,874	8,120	20,214	4,957	23,774	7,110	2,292			
% Change 1961/1951		100.0	14.6	x	0.2	0.2	33.6	6.1	5.5	13.8	3.4	16.3	4.9	1.6			
	%	20.0	-11.0	-9.2	13.2	255.1	4.0	27.7	30.0	41.3	55.3	26.4	n.a.	147.2			

Note: Due to rounding, percentages may not add to 100.0.

^aIncluded in Community, Business and Personal Services for 1951.

n. a. n

- Nil

Less than 0.05 per cent.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Labour Force, 1951 and 1961, (Ottawa: Queen's Printer), Table 18 and Table 15.

TABLE 14.

WORKING AGE POPULATION, EXPERIENCED LABOUR FORCE AND TOTAL PARTICIPATION RATES BY COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951 AND 1961

	1951			1961		
	Population		Participation Rate (3)	Population		Participation Rate (6)
	14 Years Of Age And Over No. (1)	Labour Force No. (2)		15 Years Of Age And Over No. (4)	Labour Force No. (5)	
HURON	36,095	18,807	52.10	36,179	19,933	55.10
PERTH	39,154	20,330	51.92	39,436	21,684	54.99
WATERLOO	94,362	56,043	59.39	119,457	72,675	60.84
WELLINGTON	49,910	26,720	53.54	57,260	31,997	55.88
TOTAL, MIDWESTERN ONTARIO REGION	219,521	121,900	55.53	252,332	146,289	57.97
TOTAL, PROVINCE OF ONTARIO	3,418,502	1,884,941	55.14	4,228,343	2,393,015	56.59

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Labour Force, 1951 and 1961 (Ottawa: Queen's Printer), Table 2 and Table 6.

TABLE 15.

LABOUR FORCE PARTICIPATION RATES BY SEX, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1951 AND 1961

	1951				1961			
	Population		Participation		Population		Participation	
	14 Years Of Age And Over		Rate		15 Years Of Age And Over		Rate	
	Male No. (1)	Female No. (2)	Male % (3)	Female % (4)	Male No. (5)	Female No. (6)	Male % (7)	Female % (8)
HURON	18,817	17,278	84.7	16.6	18,497	17,682	82.0	27.2
PERTH	19,492	19,662	84.3	19.9	19,589	19,847	81.2	29.4
WATERLOO	45,911	48,451	88.2	32.1	58,484	60,973	85.5	37.7
WELLINGTON	25,210	24,700	81.2	25.4	28,781	28,479	79.0	32.9
TOTAL, MIDWESTERN ONTARIO REGION	109,430	110,091	85.3	26.0	125,351	126,981	82.8	33.9
TOTAL, PROVINCE OF ONTARIO	1,711,373	1,707,129	84.2	26.1	2,106,048	2,122,295	81.1	32.9

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Labour Force, 1951 and 1961 (Ottawa: Queen's Printer), Volume V, Table 2 and Volume 3.3, Table 6.

TABLE 16.

DOCTORS IN THE MIDWESTERN ONTARIO REGION BY COUNTIES AND CENTRES OF 1,000 POPULATION AND OVER, 1966 AND 1968

	POPULATION	DOCTORS		POPULATION/ DOCTOR
	1966	1966	1968	1966
	No. (1)	No. (2)	No. (3)	No. (4)
HURON				
Clinton	3,280	7	6	469
Exeter	3,226	4	4	807
Goderich	6,710	9	10	746
Seaforth	2,241	6	5	374
Wingham	2,974	4	3	744
TOTAL, HURON COUNTY	54,446	35	33	1,556
PERTH				
Listowel	4,526	5	10	905
Milverton	1,122	1	2	1,122
Mitchell	2,371	3	3	790
St. Mary's	4,750	8	9	594
Stratford	23,068	37	37	623
TOTAL, PERTH COUNTY	60,424	57	64	1,060
WATERLOO				
Ayr	1,134	1	1	1,134
Bridgeport	2,111	-	1	-
Elmira	4,047	4	4	1,012
Galt	33,491	37	37	905
Hespeler	5,381	3	3	1,794
Kitchener	93,255	150	154	622
New Hamburg	2,438	3	3	813
Preston	13,380	9	10	1,487
Waterloo	29,889	33	40	906
TOTAL, WATERLOO COUNTY	216,728	246	259	881
WELLINGTON				
Arthur	1,242	1	1	1,242
Elora	1,644	2	2	822
Erin	1,195	2	2	598
Fergus	4,376	6	6	729
Guelph	51,377	73	79	704
Harriston	1,748	2	2	874
Mount Forest	2,839	3	3	953
Palmerston	1,631	6	5	272
TOTAL, WELLINGTON COUNTY	94,177	97	102	971
TOTAL, MIDWESTERN ONTARIO REGION	425,775	435	458	979
TOTAL, PROVINCE OF ONTARIO	6,960,870	9,174	9,669	759

- Nil

Sources: Canada, Dominion Bureau of Statistics, Census of Canada, Population, (Ottawa: Queen's Printer), Table 9.

Canadian Medical Directory, 1967, Seccombe House, 1967.

Canadian Medical Directory, 1969, Seccombe House, 1969.

TABLE 17.

DENTAL SERVICES BY COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1966 AND 1968

	1966	1966		1968	
	POPULATION	DENTISTS		DENTISTS	
	No. (1)	No. (2)	Ratio 1/ (3)	No. (4)	Ratio 1/ ^a (5)
HURON	54,446	13	4,188	13	4,346
PERTH	60,424	16	3,777	19	3,263
WATERLOO	216,728	82	2,643	89	2,630
WELLINGTON	94,177	30	3,139	36	2,800
TOTAL, MIDWESTERN ONTARIO REGION	425,775	141	3,020	157	2,888
TOTAL, PROVINCE OF ONTARIO	6,960,870	2,616	2,661	2,905	2,515

^aRatio calculated using population estimates supplied by Research and Planning Branch, Ontario Department of Health.

Sources: Canada, Dominion Bureau of Statistics, Census of Canada, Population, 1966, (Ottawa: Queen's Printer), Table 9.
Proceedings of The Royal College of Dental Surgeons of Ontario, 1966 and 1968.

TABLE 18.

MUSEUM SERVICES IN THE MIDWESTERN ONTARIO REGION, 1966

	POPULATION 1966 (1)	NUMBER AND TYPE OF MUSEUM				MUSEUM ACTIVITIES					
		History (2)	Science (3)	Art (4)	Combination (5)	Guided Tours (6)	Films And Lectures	Inter-museum Loans	Education Programs (9)	Other (10)	
							(7)	(8)			
HURON Coderich	6,710	1	-	-	-	X	-	-	-	-	Farming Demonstrations
TOTAL, HURON COUNTY	54,446	1									
PERTH St. Mary's	4,750	1	-	-	-	X	-	-	-	-	-
TOTAL, PERTH COUNTY	60,424	1									
WATERLOO Doon Kitchener	547 93,255	1 1	- -	- -	- -	- -	- -	- -	- -	- -	Art Festivals -
TOTAL, WATERLOO COUNTY	216,728	2									
WELLINGTON Elora	1,644	1	-	-	-	-	-	X	-	-	History Essay Contests
TOTAL, WELLINGTON COUNTY	94,177	1									
TOTAL, MIDWESTERN ONTARIO REGION	425,775	5									

- Nil

X Museum activities.

Source: Museum Directory of United States and Canada.

TABLE 19.

ART GALLERIES, PUBLIC AND COMMERCIAL, SELECTED URBAN CENTRES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1968

	Population 1966	Public Galleries	Galleries Affiliated With Library Boards	Universities With Gallery Or Exhibition Facilities	Commercial Galleries
	No.	No.	No.	No.	No.
	(1)	(2)	(3)	(4)	(5)
GUELPH	51,377	-	1	-	-
KITCHENER AND WATERLOO	93,255) 29,889)	1	-	1	-
STRATFORD	23,068	1	-	-	-
TOTAL, MIDWESTERN ONTARIO REGION	425,775	2	1	1	-
TOTAL, PROVINCE OF ONTARIO	6,960,870	16	9	11	50

- Nil

Source: Ontario Council for the Arts, Special Tabulation, 1969.

TABLE 20.

ONTARIO FEDERATION OF SYMPHONY ORCHESTRAS, AUDIENCE POTENTIAL AND CAPACITY, SELECTED URBAN CENTRES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1968

ORCHESTRAS		Nature Of Facility Used For Performances	Population 1966 No.	Seating Capacity No.	Persons Per Seating Unit No.	Average Audience Size No.
No. (1)	Title (2)					
1	Kitchener-Waterloo Symphony	Cinema	123,144	1,100	112	1,005
1			452,775	1,100	412	1,005
21			6,960,870	19,265	361	820
TOTAL, MIDWESTERN ONTARIO REGION						
TOTAL, PROVINCE OF ONTARIO						

Source: Ontario Council for the Arts, Special Tabulation, 1968.

TABLE 21.

THEATRICAL FACILITIES BY TYPE, SELECTED URBAN CENTRES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1967

	Population 1966	Persons Per Seating Unit	Theatres	Civic Auditoriums, Arenas etc.	High School Auditoriums	University Theatres, Auditoriums
	No. (1)	No. (2)	No. (3)	No. (4)	No. (5)	No. (6)
CLINTON		A	-	1	-	-
	3,280	3 B	-	1,000	-	-
GUELPH		A	-	-	2	1
	51,377	17 B	-	-	2,200	839
KITCHENER		A	1	1	5	-
	93,255	12 B	1,410	3,000	3,164	-
STRAFFORD		A	2	-	1	-
	23,068	6 B	3,248	-	800	-
WATERLOO		A	-	-	1	1
	29,889	14 B	-	-	600	1,504
TOTAL, MIDWESTERN ONTARIO REGION		A	3	2	9	2
	425,775	24 B	4,658	4,000	6,764	2,343
TOTAL, PROVINCE OF ONTARIO		A	36	50	170	12
	6,960,870	29 B	44,661	89,814	130,208	19,167

A - Number of facilities.

B - Seating capacity.

- Nil

Sources: Canadian Theatre Centre, Special Tabulation, 1961 and 1967;
National Arts Centre, Special Tabulation, 1967.

TABLE 22.

LAND AREA, TOTAL FARMLAND, IMPROVED FARMLAND, TOWNSHIPS, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	TOTAL LAND AREA			FARMLAND			IMPROVED FARMLAND		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HURON	828,800	781,556	765,145	752,043	-4.0	-1.7	615,350	623,767	620,472
Ashfield	66,419	63,126	60,198	59,361	-6.4	-1.9	52,172	51,633	51,919
Colborne	35,667	32,573	31,459	29,218	-10.3	-6.5	25,925	25,401	24,145
Goderich	57,510	49,688	47,675	44,599	-10.2	-3.4	36,390	36,615	35,339
Grey	66,496	62,978	61,821	59,737	-5.2	-3.4	47,004	48,847	48,328
Hay	55,450	49,694	49,114	46,369	-6.7	-5.6	39,518	39,943	39,997
Howick	70,874	65,712	65,749	66,138	0.7	0.6	47,431	50,793	50,904
Hullett	55,354	55,784	51,760	51,865	-7.0	0.2	46,261	43,633	44,471
McMillan	54,534	49,224	51,041	51,779	5.2	1.5	43,498	45,629	47,385
Morris	56,621	53,616	54,810	51,966	-3.1	-5.2	39,687	44,184	43,282
Stanley	47,398	42,811	41,711	42,550	-0.6	2.0	32,404	33,797	35,944
Stephen	60,493	56,415	53,457	53,234	-5.6	-0.4	45,754	44,847	46,164
Tuckersmith	42,675	43,219	40,010	39,597	-8.4	-1.0	37,543	34,992	34,524
Turnberry	36,704	36,804	35,505	36,394	-1.1	2.5	25,584	25,612	24,476
Usborne	44,077	45,534	44,331	43,208	-5.1	-2.5	41,174	40,803	39,341
Wawanosh, East	43,014	40,836	40,044	40,238	-1.5	0.5	28,851	30,238	29,414
Wawanosh, West	42,342	35,342	36,450	36,090	1.5	-1.0	26,154	26,800	26,839
PERTH	537,600	515,333	511,303	508,387	-1.4	-0.6	452,528	445,516	456,893
Blanshard	47,482	46,582	45,807	44,586	-4.3	-2.7	40,154	40,675	40,634
Downie	50,272	48,174	47,350	46,214	-4.1	-2.4	42,131	42,754	41,389
Easthope, North	44,435	41,283	41,315	41,276	-0.0	-0.1	34,338	35,233	35,530
Easthope, South	24,525	24,025	22,601	22,276	-7.3	-0.4	21,273	20,218	19,791
Ellice	57,005	51,269	50,597	50,563	-1.4	-0.1	45,683	46,727	46,790
Elna	68,486	66,886	65,373	64,471	-3.6	-1.4	58,343	57,961	57,144
Fullarton	41,869	39,853	40,176	41,324	2.9	2.9	35,175	35,585	36,982
Hibbert	43,258	38,270	40,226	40,457	5.7	0.6	33,632	34,425	35,722
Logan	56,160	55,836	55,957	55,957	-1.8	0.2	52,672	52,024	52,729
Morrington	50,707	49,988	50,063	50,397	0.8	0.7	45,214	45,918	46,203
Wallace	51,558	52,032	51,959	50,866	-2.2	-2.1	43,713	43,996	43,979
WATERLOO	330,240	291,789	276,636	267,460	-8.3	-3.3	237,154	229,112	225,536
Dumfries, North	43,488	39,322	36,511	35,173	-10.6	-3.7	30,158	28,233	27,253
Waterloo	69,517	74,866	62,291	56,427	-24.6	-9.4	59,000	50,630	47,332
Wellesley	67,674	63,760	64,644	64,055	0.5	-0.9	54,313	55,659	55,892
Wilmer	66,221	60,303	58,721	57,434	-4.8	-2.2	50,486	49,727	49,727
Woolwich	55,258	53,538	54,469	54,371	1.6	-0.2	43,197	44,845	45,332
WELLINGTON	652,160	606,630	570,823	557,724	-8.1	-2.3	472,083	458,193	456,602
Arthur	66,758	66,674	63,530	62,660	-6.0	-1.4	54,028	51,133	51,466
Eramosa	47,002	41,556	40,647	39,751	-4.3	-2.2	29,990	30,437	30,653
Erin	71,133	64,736	59,243	56,969	-12.0	-3.8	45,262	44,509	43,596
Garafra, West	47,437	45,794	43,251	42,745	-6.7	-1.2	38,965	36,387	36,865
Guelph	14,162	36,115	31,757	34,188	-5.3	7.7	28,138	26,297	28,280
Luther, West	51,226	45,896	42,231	43,636	-0.9	3.3	34,697	33,279	35,427
Maryborough	37,485	53,303	51,429	53,666	4.7	4.4	45,739	44,765	46,995
Minto	1,174	67,653	67,653	65,382	-8.0	-1.5	52,014	51,653	50,812
Nichol	25,294	26,215	26,437	25,480	-2.8	-3.6	21,159	21,702	21,457
Peel	13,878	74,372	72,162	68,838	-4.6	-4.6	64,199	62,949	61,277
Pikington	10,810	28,779	28,055	27,512	-4.4	-1.9	23,686	23,919	23,141
Psalineh	61,734	52,199	44,428	36,997	-29.1	-16.7	34,206	30,857	26,633
TOTAL, MIDWESTERN ONTARIO REGION	2,348,800	2,197,808	2,123,897	2,085,614	-5.1	-1.8	1,777,115	1,766,588	1,759,503
TOTAL, PROVINCE OF ONTARIO	220,218,818	20,880,054	18,578,507	17,826,045	-14.6	-4.1	12,693,250	12,032,924	12,104,305

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Tables 29 and 16, 28 and 12, and 27 and 13.

TABLE 23.

FARMLAND AS A PERCENTAGE OF TOTAL LAND AREA, TOWNSHIPS, COUNTIES, MIDWESTERN
ONTARIO REGION, 1951, 1961 AND 1966

	<u>1951</u>	<u>1961</u>	<u>1966</u>
	<u>%</u>	<u>%</u>	<u>%</u>
	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
HURON	94.5	92.3	90.7
Ashfield	95.0	90.6	88.9
Colborne	91.3	88.2	81.9
Coderich	86.4	82.9	77.6
Grey	94.7	93.0	89.8
Hay	89.6	88.6	83.6
Howick	92.7	92.8	93.3
Hullett	100.0	93.5	93.7
McKillop	90.2	93.6	94.9
Morris	94.7	96.8	91.8
Stanley	90.3	88.0	89.8
Stephen	93.3	88.4	88.0
Tuckersmith	100.0	93.8	92.8
Turnberry	100.0	96.7	99.2
Usborne	100.0	100.0	98.0
Wawanosh, East	94.9	93.1	93.6
Wawanosh, West	83.9	86.1	85.2
PERTH	95.9	95.1	94.6
Blanshard	98.1	96.5	93.9
Downie	95.8	94.2	91.9
Easthope, North	92.9	93.0	92.9
Easthope, South	98.0	92.2	90.8
Ellice	89.9	88.8	88.7
Elma	97.7	95.5	94.1
Fullarton	95.2	96.0	98.7
Hibbert	88.5	93.0	93.5
Logan	100.0	99.4	99.6
Mornington	98.6	98.7	99.4
Wallace	100.0	100.0	98.7
WATERLOO	88.4	83.8	81.0
Dumfries, North	90.4	84.0	80.9
Waterloo	100.0	89.6	81.2
Wellesley	94.2	95.5	94.7
Wilmot	91.1	88.7	86.7
Woolwich	96.9	98.6	98.4
WELLINGTON	93.0	87.5	85.5
Arthur	99.9	95.2	93.9
Eramosa	88.4	86.5	84.6
Erin	87.6	80.1	77.1
Garafraxa, West	96.5	91.2	90.1
Guelph	92.2	81.1	87.3
Luther, West	89.6	82.4	85.2
Maryborough	92.7	89.5	93.4
Minto	99.2	94.5	91.2
Nichol	92.7	93.4	90.1
Peel	98.0	95.1	90.7
Pilkington	93.4	91.1	89.3
Puslinch	84.6	72.0	59.9

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Tables 29 and 16, 28 and 12, 27 and 13.

TABLE 24.

NUMBER, AREA AND AVERAGE SIZE OF FARMS, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	TOTAL NUMBER OF FARMS			TOTAL AREA OF FARMS		% CHANGE 1966/1951		% CHANGE 1966/1961		Average Area Per Farm (Acres)
	Number (1)	% Of Regional Total (2)		Area (Acres) (3)	% Of Regional Total (4)	Number Of Farms (5)	Total Area Of Farms (6)	Number Of Farms (7)	Total Area Of Farms (8)	
HURON	1951	5,772	3.9	783,556	3.8	-20.9	-4.0	-9.6	-1.7	135.8
	1961	5,052	4.2	765,135	4.1					151.5
	1966	4,365	4.2	752,043	4.2					164.7
PERTH	1951	4,357	2.9	515,333	2.5	-12.6	-1.4	-7.6	-0.6	118.3
	1961	4,122	3.4	511,303	2.8					124.0
	1966	3,808	3.5	508,387	2.9					133.5
WATERLOO	1951	2,638	1.8	291,789	1.4	-15.1	-8.3	-8.1	-3.3	110.6
	1961	2,435	2.0	276,636	1.5					113.6
	1966	2,239	2.0	267,460	1.5					119.5
WELLINGTON	1951	4,463	3.0	606,630	2.9	-15.6	-8.1	-5.9	-2.3	135.9
	1961	4,005	3.3	570,823	3.1					142.5
	1966	3,768	3.4	557,724	3.1					148.0
TOTAL, MIDWESTERN ONTARIO REGION	1951	17,230	11.5	2,197,308	10.5	-16.5	-5.1	-7.9	-1.8	127.5
	1961	15,614	12.9	2,123,897	11.4					136.0
	1966	14,380	13.1	2,085,614	11.7					145.0

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 16, Table 12 and Table 13.

TABLE 25.

FARM CAPITAL VALUE, DOLLAR VALUE PER ACRE, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	1951			1961			1966			% Change in Total Value 1966/1951			% Change in \$ Value Per Acre 1966/1951		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Total Value (\$'000's)	\$ Value Per Acre	% Of Total Value Per Acre	Total Value (\$'000's)	\$ Value Per Acre	% Of Total Value Per Acre	Total Value (\$'000's)	\$ Value Per Acre	% Of Total Value Per Acre	% Change in Total Value 1966/1951	% Change in Total Value 1966/1951	% Change in \$ Value Per Acre 1966/1951	% Change in Total Value 1966/1951	% Change in Total Value 1966/1951	% Change in \$ Value Per Acre 1966/1951
HURON															
Land and Buildings	38,638	62	47	84,408	110	60	127,697	170	63	162.5	51.3		162.5	51.3	174.2
Machinery and Equipment	19,412	24	18	23,097	30	16	33,420	45	16	72.2	44.7		72.2	44.7	
Livestock and Poultry	36,279	46	35	34,496	45	24	42,399	56	21	16.9	22.9		16.9	22.9	
TOTAL	104,329	132	100	142,001	185	100	203,516	271	100	95.1	43.3		95.1	43.3	
PERTH															
Land and Buildings	42,702	82	46	76,447	149	59	116,102	229	63	171.9	51.9		171.9	51.9	179.3
Machinery and Equipment	17,083	33	19	21,596	42	17	31,676	62	17	85.4	46.7		85.4	46.7	
Livestock and Poultry	31,517	61	35	30,817	60	24	37,731	74	20	19.7	22.4		19.7	22.4	
TOTAL	91,302	176	100	128,860	251	100	185,508	365	100	103.2	44.0		103.2	44.0	
WATERLOO															
Land and Buildings	30,598	104	52	63,820	230	67	93,109	348	70	204.3	45.9		204.3	45.9	234.6
Machinery and Equipment	10,168	34	17	13,640	49	14	16,519	62	13	62.5	21.1		62.5	21.1	
Livestock and Poultry	18,215	62	31	18,494	66	19	22,902	86	17	25.7	23.8		25.7	23.8	
TOTAL	58,981	200	100	95,954	345	100	132,530	496	100	124.7	38.1		124.7	38.1	
WELLINGTON															
Land and Buildings	40,320	66	48	80,164	140	65	116,012	208	67	187.7	44.7		187.7	44.7	215.2
Machinery and Equipment	14,635	24	17	17,817	31	14	24,929	55	14	70.3	39.9		70.3	39.9	
Livestock and Poultry	28,537	47	34	26,705	46	21	33,363	60	19	16.9	24.9		16.9	24.9	
TOTAL	83,492	137	100	124,686	217	100	174,304	313	100	108.8	39.8		108.8	39.8	
TOTAL, MIDWESTERN ONTARIO REGION															
Land and Buildings	162,258	73	48	304,839	143	62	452,919	217	65	179.1	48.6		179.1	48.6	197.3
Machinery and Equipment	61,298	27	18	76,150	35	15	106,544	51	15	73.8	39.9		73.8	39.9	
Livestock and Poultry	114,548	52	34	110,512	52	23	136,395	66	20	19.1	23.4		19.1	23.4	
TOTAL	338,104	152	100	491,501	230	100	695,858	333	100	105.8	41.6		105.8	41.6	

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Tables 30 and 16, 18 and 12, 22 and 14.

TABLE 26.

COMMERCIAL FARMS CLASSIFIED BY ECONOMIC CLASS OF FARM, COUNTIES, MIDWESTERN ONTARIO REGION, 1961 AND 1966

			COMMERCIAL FARMS ^a						OTHER FARMS				TOTALS CENSUS ^b FARMS No. (10)
			Value Of Agricultural Products Sold						Total Commercial Farms ^c No. (7)	Small Scale Farms ^c No. (8)	Residential And Other Small Farms ^d No. (9)		
			\$2,500- 3,749 (1)	\$3,750- 4,999 (2)	\$5,000- 9,999 (3)	\$10,000- 14,999 (4)	\$15,000- 24,999 (5)	\$25,000 And Over (6)					
HURON	1961	No. % ^b	688 18.7	579 15.7	1,489 40.5	488 13.3	282 7.7	153 4.2	3,679 100.0	1,132	241	5,052	
	1966	No. % ^b	369 10.1	347 9.5	1,234 33.7	763 20.8	565 15.4	386 10.5	3,664 100.0	646	255	4,565	
	*		-46.4	-40.1	-17.1	56.4	100.4	152.3	-0.4	-42.9	5.8	-9.6	
	1961	No. % ^b	452 13.9	490 15.0	1,419 43.5	524 16.1	258 7.9	116 3.6	3,259 100.0	681	182	4,122	
PERTH	1966	No. % ^b	244 7.5	250 7.7	1,117 34.5	744 23.0	567 17.5	313 9.7	3,235 100.0	414	159	3,808	
	*		-46.0	-49.0	-21.3	42.0	119.8	169.8	-0.7	-39.2	-12.6	-7.6	
	1961	No. % ^b	190 10.6	184 10.3	536 29.9	368 20.6	319 17.8	193 10.8	1,790 100.0	482	163	2,435	
	1966	No. % ^b	111 6.3	124 7.1	393 22.4	338 19.3	408 23.2	381 21.7	1,755 100.0	308	176	2,239	
WELLINGTON		*	-41.6	-32.6	-26.7	-8.2	27.9	97.4	-2.0	-36.1	8.0	-8.0	
	1961	No. % ^b	488 17.6	438 15.8	1,044 37.7	397 14.3	266 9.6	138 5.0	2,771 100.0	950	284	4,005	
	1966	No. % ^b	357 12.6	244 8.6	895 31.6	561 19.8	436 15.4	340 12.0	2,833 100.0	708	227	3,768	
	*		-26.8	-44.3	-14.3	41.3	63.9	146.4	2.2	-25.5	-20.1	-5.9	
TOTAL, MIDWESTERN ONTARIO REGION	1961	No. % ^b	1,818 15.8	1,691 14.7	4,488 39.0	1,777 15.5	1,125 9.8	600 5.2	11,499 100.0	3,243	870	15,614	
	1966	No. % ^b	1,081 9.4	965 8.4	3,639 31.7	2,406 20.9	1,976 17.2	1,420 12.4	11,487 100.0	2,076	817	14,380	
	*		-40.5	-42.9	-18.9	35.4	75.6	136.7	-0.1	-36.0	-6.1	-7.9	

Note: Due to rounding, percentages may not add to 100.0.

*Percentage change 1966/1961.

^aCommercial farm defined as a farm whose value of agricultural products sold exceeds \$2,500/annum.^bper cent of total commercial farms.^cIncludes farms whose value of agricultural products sold is less than \$2,500/annum, and institutional farms.^dfarms whose value of agricultural products sold is less than \$250/annum.Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Queen's Printer), Table 14 and Table 15.

TABLE 27

VALUE OF AGRICULTURAL PRODUCTS SOLD, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	1951		% OF		1961		% OF		1966		% CHANGE					
	\$	(1)	1951	(2)	Total Value	\$	(3)	1961	(4)	Total Value	\$	(5)	1966	(6)	1966/1951	1966/1961
HURON																
Field Crops	2,845,242		11.6		2,263,160		6.2			5,834,640		11.0		105.1	157.8	
Livestock	15,013,489		61.3		21,126,570		58.1			30,741,170		58.0		104.8	45.5	
Fruits and Vegetables	162,202		0.7		213,590		0.6			784,100		1.5		383.4	267.1	
Poultry and Eggs	3,035,222		12.4		7,181,260		19.8			7,757,290		14.6		155.6	8.0	
Dairy Products	3,240,634		13.2		5,296,420		14.6			7,927,910		14.3		134.3	43.4	
Others	193,469		0.8		266,420		0.7			275,710		0.5		42.5	3.5	
TOTAL VALUE	24,490,258		100.0		36,347,420		100.0			52,985,820		100.0		116.4	45.8	
PERTH																
Field Crops	1,139,899		5.5		781,100		2.4			2,695,200		5.6		136.4	245.1	
Livestock	12,259,993		58.6		17,871,610		55.6			26,386,670		55.2		115.2	47.6	
Fruits and Vegetables	55,496		0.3		125,020		0.4			284,700		0.6		413.0	127.7	
Poultry and Eggs	2,710,414		13.0		5,231,080		16.3			6,392,580		13.4		135.9	22.2	
Dairy Products	4,442,841		21.3		7,363,380		22.9			10,941,480		22.9		146.3	48.6	
Others	297,483		1.4		790,970		2.5			1,129,790		2.4		279.8	42.8	
TOTAL VALUE	20,906,126		100.0		32,163,160		100.0			47,830,420		100.0		128.8	48.7	
WATERLOO																
Field Crops ^a	692,067		4.3		847,650		3.3			1,236,800		3.3		78.7	45.9	
Livestock	9,240,394		56.9		13,540,850		51.9			22,940,410		61.0		148.3	69.7	
Fruits and Vegetables	310,063		1.9		427,200		1.6			503,100		1.3		62.3	17.8	
Poultry and Eggs	2,415,429		14.9		5,829,430		22.4			6,166,020		16.4		155.3	5.8	
Dairy Products	3,443,994		21.2		5,157,560		19.8			6,040,680		16.1		75.4	17.1	
Others	142,780		0.9		272,710		1.0			737,920		2.0		416.8	170.6	
TOTAL VALUE	16,244,727		100.0		26,075,400		100.0			37,624,930		100.0		131.6	44.3	
WELLINGTON																
Field Crops ^a	1,176,586		6.1		775,670		2.7			1,458,950		3.4		24.0	88.1	
Livestock	12,428,409		64.8		17,392,010		60.5			26,898,430		62.8		116.4	54.7	
Fruits and Vegetables	125,121		0.7		249,170		0.9			295,690		0.7		136.3	18.7	
Poultry and Eggs	2,157,418		11.3		4,931,660		17.2			6,289,020		14.7		191.5	27.5	
Dairy Products	3,113,205		16.2		4,817,070		16.8			7,013,570		16.4		125.3	45.6	
Others	170,119		0.9		568,210		2.0			861,020		2.0		406.1	51.5	
TOTAL VALUE	19,170,858		100.0		28,733,790		100.0			42,816,680		100.0		123.3	49.0	
TOTAL, MIDWESTERN ONTARIO REGION																
Field Crops ^a	5,853,794		7.2		4,667,580		3.8			11,225,590		6.2		91.8	140.5	
Livestock	48,942,285		60.6		69,931,040		56.7			106,966,680		59.0		118.6	53.0	
Fruits and Vegetables	652,882		0.8		1,014,980		0.8			1,867,590		1.0		186.1	84.0	
Poultry and Eggs	10,318,483		12.8		23,173,430		18.8			26,604,910		14.7		157.8	14.8	
Dairy Products	14,240,674		17.6		22,634,430		18.4			31,588,640		17.4		121.8	39.6	
Others	803,851		1.0		1,898,310		1.5			3,004,440		1.7		273.8	58.3	
TOTAL VALUE	80,811,969		100.0		123,319,770		100.0			181,257,850		100.0		124.3	47.0	

^afigure includes tobacco

Note: Due to rounding, percentages may not add to 100.0.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 28, Table 20 and Table 23.

TABLE 28.

NUMBER AND VALUE OF LIVESTOCK ON FARMS, COUNTIES, MIDWESTERN ONTARIO REGION AND THE REGION AS A PERCENT OF ONTARIO, 1951, 1961 AND 1966

	HORSES AND PONIES		CATTLE		SWINE		SHEEP		HENS AND CHICKENS	
	No. (1)	\$ (2)	No. (3)	\$ (4)	No. (5)	\$ (6)	No. (7)	\$ (8)	No. (9)	\$ (10)
HURON	1951 1961 1966	9,802 2,228 1,969	132,623 188,623 202,159	28,671,381 28,346,222 33,788,400	113,295 107,267 132,793	4,270,140 3,257,705 5,316,700	8,763 10,855 6,267	293,200 189,502 144,000	1,426,409 1,916,690 1,868,714	2,078,769 1,940,686 1,832,200
PERTH	1951 1961 1966	8,694 2,544 2,167	107,709 148,209 160,329	23,993,126 24,073,795 27,849,000	122,031 140,184 170,976	4,698,801 3,990,440 6,926,300	5,163 4,409 3,309	189,634 83,305 78,000	1,179,187 1,533,957 1,532,722	1,768,254 1,533,957 1,525,200
WATERLOO	1951 1961 1966	5,868 3,296 3,222	54,892 77,784 82,384	12,766,312 12,706,441 14,569,700	79,447 95,847 127,001	3,117,841 2,832,766 5,031,300	3,004 3,536 2,943	173,022 69,387 69,900	970,042 1,435,670 1,441,191	1,469,446 1,413,425 1,370,800
WELLINGTON	1951 1961 1966	9,824 3,784 2,939	96,547 132,306 143,271	21,549,266 20,791,512 24,333,500	101,658 107,168 139,292	4,210,946 3,212,845 5,637,400	13,155 14,549 11,238	488,440 284,053 266,400	1,017,486 1,382,602 1,668,210	1,424,533 1,266,340 1,375,400
TOTAL, MIDWESTERN ONTARIO REGION	1951 1961 1966	34,183 11,946 10,297	391,571 546,937 588,133	86,972,085 85,918,470 100,540,600	416,419 450,456 570,062	16,297,728 13,293,756 22,911,700	32,085 33,349 23,757	1,144,296 626,247 558,300	4,593,124 6,186,059 6,530,837	6,741,002 6,154,408 6,103,600
REGION AS A % OF PROVINCE	1951 1961 1966	13.1 13.4 13.7	15.9 17.6 18.7	16.1 17.8 18.9	23.7 26.7 29.5	23.3 26.3 29.7	8.9 9.8 9.0	9.2 10.0 9.5	19.3 25.0 25.8	20.5 25.6 24.6

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 21, Table 19 and Table 18.

TABLE 28.

TURKEYS		DUCKS AND GEESE		TOTAL	
No. (11)	\$ (12)	No. (13)	\$ (14)	No. (15)	\$ (16)
15,759	83,050	14,304	38,378	1,720,955	36,192,338
80,684	367,918	7,343	16,856	2,313,690	34,477,597
171,461	814,400	5,176	13,340	2,408,529	42,259,540
9,732	51,288	10,195	29,008	1,442,711	31,484,396
152,040	693,303	4,831	14,242	1,903,314	30,803,714
200,250	941,200	2,768	7,940	2,072,521	37,700,340
34,075	179,575	8,153	23,529	1,157,264	18,202,589
206,750	889,026	4,911	12,203	1,827,893	18,483,098
244,683	1,162,200	3,702	11,110	1,905,126	22,859,410
5,564	29,322	9,932	28,374	1,254,166	28,488,694
121,632	499,908	4,164	10,543	1,766,205	26,693,345
242,795	1,165,400	7,168	20,980	2,214,913	33,372,180
65,130	343,235	42,584	119,289	5,575,096	114,368,017
561,106	2,450,155	21,249	53,844	7,811,102	110,457,754
859,189	4,083,200	18,814	53,370	8,601,089	136,191,470
9.8	9.8	14.0	14.4	18.8	16.8
20.4	20.3	11.1	11.3	23.8	18.7
21.2	21.1	9.6	10.5	24.6	20.2

TABLE 29.

LIVESTOCK INDEX, NUMBER AND VALUE OF SELECTED LIVESTOCK, COUNTIES, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	LIVESTOCK INDEX, NUMBERS			LIVESTOCK INDEX, VALUE		
	1951 = 100			1951 = 100		
	1951 (1)	1961 (2)	1966 (3)	1951 (4)	1961 (5)	1966 (6)
HURON						
Horses and Ponies	100	22	20	100	47	46
Cattle	100	142	152	100	99	118
Swine	100	95	117	100	76	125
Hens and Chickens	100	134	132	100	93	88
Turkeys	100	512	1,088	100	443	981
PERTH						
Horses and Ponies	100	29	25	100	55	49
Cattle	100	138	149	100	100	116
Swine	100	115	140	100	85	147
Hens and Chickens	100	123	130	100	87	86
Turkeys	100	1,562	2,058	100	1,352	1,835
WATERLOO						
Horses and Ponies	100	58	55	100	116	134
Cattle	100	142	151	100	100	114
Swine	100	121	160	100	91	161
Hens and Chickens	100	148	149	100	96	93
Turkeys	100	607	718	100	495	647
WELLINGTON						
Horses and Ponies	100	39	30	100	83	76
Cattle	100	137	148	100	96	113
Swine	100	105	137	100	76	134
Hens and Chickens	100	136	164	100	89	97
Turkeys	100	2,186	4,364	100	1,705	3,974
TOTAL, MIDWESTERN ONTARIO REGION						
Horses and Ponies	100	35	30	100	71	71
Cattle	100	140	150	100	99	116
Swine	100	108	137	100	82	141
Hens and Chickens	100	135	142	100	91	91
Turkeys	100	862	1,319	100	714	1,190

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Table 21, Table 19 and Table 18.

TABLE 30.

IMPROVED FARMLAND AS A PERCENTAGE OF TOTAL FARMLAND, TOWNSHIPS, COUNTIES,
MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966.

	1951 %	1961 %	1966 %
	(1)	(2)	(3)
HURON	78.5	81.5	82.5
Ashfield	82.6	85.8	87.9
Colborne	79.6	80.7	82.6
Goderich	73.2	76.8	79.2
Grey	74.6	79.0	80.9
Hay	79.5	81.3	86.3
Howick	72.2	77.3	77.0
Hullett	82.9	84.3	85.7
McKillop	88.4	89.4	91.5
Morris	74.0	80.6	79.4
Stanley	75.7	81.0	84.5
Stephen	81.1	83.9	86.7
Tuckersmith	86.9	87.5	87.2
Turnberry	69.5	72.1	67.3
Usborne	90.4	92.0	91.1
Wawanosh, East	70.7	75.5	73.1
Wawanosh, West	73.6	73.5	74.4
PERTH	87.8	89.1	90.0
Blanshard	86.2	88.8	91.1
Downie	87.5	90.3	89.6
Easthope, North	83.2	85.3	86.1
Easthope, South	88.5	89.5	88.8
Ellice	89.1	92.4	92.5
Elma	87.5	88.7	88.6
Fullarton	88.3	88.6	89.5
Hibbert	87.9	85.6	88.3
Logan	92.5	93.2	94.2
Mornington	90.4	91.7	91.7
Wallace	84.0	84.7	86.5
WATERLOO	81.3	82.8	84.3
Dumfries, North	76.7	77.3	77.5
Waterloo	78.8	81.3	83.9
Wellesley	85.2	86.1	87.3
Wilmot	83.7	84.7	86.6
Woolwich	80.7	82.3	83.4
WELLINGTON	77.8	80.3	81.9
Arthur	81.0	80.5	82.1
Eramosa	72.2	74.9	77.1
Erin	69.9	75.1	76.5
Garafraxa, West	85.1	84.1	86.2
Guelph	77.9	82.8	82.7
Luther, West	75.6	78.8	81.2
Maryborough	85.8	87.0	87.6
Minto	73.3	76.8	77.8
Nichol	80.7	82.1	84.2
Peel	86.3	87.2	89.0
Pilkington	82.3	85.3	84.1
Puslinch	65.5	69.5	72.0

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Agriculture, 1951, 1961 and 1966 (Ottawa: Queen's Printer), Tables 29 and 16, 28 and 12, and 27 and 13.

TABLE 31.

NUMBER OF FUR FARMS, MINK PELT PRODUCTION AND VALUE, COUNTIES, MIDWESTERN ONTARIO
REGION AND PROVINCE OF ONTARIO: 1963, 1965 AND 1966

	NO. OF FARMS	MINK PELT PRODUCTION		% CHANGE 1966/1963	
		Number	\$ Value ^a	Number	Value
	(1)	(2)	(3)	(4)	(5)
HURON					
1963	10	6,478	113,530		
1965	10	8,444	159,440		
1966	10	9,105	128,303	40.6	13.0
PERTH					
1963	41	50,415	873,152		
1965	38	62,070	1,222,742		
1966	43	69,578	987,817	38.0	13.1
WATERLOO					
1963	22	36,814	649,639		
1965	20	35,795	630,057		
1966	20	38,704	525,192	5.1	-19.2
WELLINGTON					
1963	39	40,103	684,177		
1965	45	49,397	933,391		
1966	46	57,549	797,643	43.5	16.6
TOTAL, MIDWESTERN ONTARIO REGION					
1963	112	133,810	2,320,498		
1965	113	155,706	2,945,630		
1966	119	174,936	2,438,955	30.7	5.1
TOTAL, PROVINCE OF ONTARIO					
1963	505	432,666	7,552,660		
1965	494	479,760	8,796,633		
1966	491	566,262	7,775,364	30.9	2.9

^a Estimated dollar value.

SOURCE: Ontario, Department of Lands and Forests, Special Tabulation (Toronto, 1968).

TABLE 32.

VALUE OF MINERAL PRODUCTION BY COUNTIES, MIDWESTERN ONTARIO REGION,
1961 AND 1966

	<u>1961</u> \$ <u>(1)</u>	<u>1966</u> \$ <u>(2)</u>	<u>% Change</u> <u>1966/1961</u> <u>(3)</u>
HURON	5,573,446	7,733,928	38.76
PERTH	7,180,683	12,363,918	72.18
WATERLOO	2,522,188	3,496,282	38.62
WELLINGTON	4,024,636	5,312,419	32.00
TOTAL, MIDWESTERN ONTARIO REGION	19,300,953	28,906,547	49.77

Note: Data based upon figures supplied by the Ontario Department of Mines.

Source: Ontario Department of Treasury and Economics, Regional
Development Branch.

TABLE 33.

VALUE OF BUILDING PERMITS BY TYPE IN 1957, 1961 AND 1966 FOR MIDWESTERN ONTARIO REGION, COUNTIES AND SELECTED MUNICIPALITIES

	1957					1961						
	Institutional				Total Value \$'000's (b)	Institutional						
Residential \$'000's (1)	Industrial \$'000's (2)	Commercial \$'000's (3)	Government \$'000's (4)	Other \$'000's (5)		Residential \$'000's (7)	Industrial \$'000's (8)	Commercial \$'000's (9)	Government \$'000's (10)	Other \$'000's (11)	Total Value \$'000's (12)	
HURON												
Goderich (Town)	286	37	92	63	-	478	1,143	355	735	149	-	2,382
	140	7	32	22	-	201	15	-	-	-	-	15
PERTH												
Stratford (City)	945	1,419	1,632	333	4	4,333	1,597	1,705	795	2,012	-	6,109
	671	169	1,628	333	4	2,805	324	-	6	-	-	330
WATERLOO												
Galt (City)	11,630	1,858	1,980	2,046	314	17,808	16,793	5,140	8,356	7,741	190	38,220
Kitchener (City)	1,723	539	215	350	5	2,832	2	2	38	-	-	42
Preston (Town)	5,901	558	1,227	1,241	302	9,229	222	35	100	20	-	377
Waterloo (City)	792	292	6	39	-	1,129	23	-	12	-	-	35
Wilmet (Township)	1,938	123	284	368	-	2,713	53	30	9	-	-	92
Woolwich (Township)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	34	-	-	-	-	34
	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	61	-	-	-	-	61
WELLINGTON												
Guelph (City)	2,899	804	543	660	5	4,911	4,197	349	1,279	672	-	6,497
	2,473	795	428	370	5	4,071	58	60	4	68	-	190
TOTAL MIDWESTERN ONTARIO REGION	15,760	4,118	4,227	4,102	323	27,530	23,730	7,549	11,165	10,574	190	53,208

- Nil
n.a. Not available.

SOURCES: Canada, Dominion Bureau of Statistics, Housing and Building Permits Section Special Tabulation 1968.
Canada, Dominion Bureau of Statistics, Building Permits, 1957, 1961 and 1966 (Ottawa: Queen's Printer, 1958, 1962 and 1967).

TABLE 33.

VALUE OF BUILDING PERMITS BY TYPE IN 1957, 1961 AND 1966 FOR MIDWESTERN ONTARIO REGION, COUNTIES AND SELECTED MUNICIPALITIES, (Cont'd.)

	1966				
	Residential \$'000's (13)	Industrial \$'000's (14)	Commercial \$'000's (15)	Institutional And Government \$'000's (16)	Total Value \$'000's (17)
HURON					
Goderich (Town)	691	285	260	3,730	4,966
	328	175	178	1,140	1,821
PERTH					
Stratford (City)	3,504	681	1,456	2,096	7,737
	1,991	582	1,114	912	4,599
WATERLOO					
Galt (City)	36,114	13,543	9,853	31,641	91,151
Kitchener (City)	4,552	3,192	543	259	8,546
Preston (Town)	16,588	7,288	6,712	3,260	33,848
Waterloo (City)	2,751	840	825	910	5,326
Wilmot (Township)	7,045	738	775	24,008	32,566
Woolwich (Township)	980	104	36	2,264	3,384
	352	125	649	14	1,140
WELLINGTON					
Guelph (City)	10,522	1,482	1,894	33,726	47,624
	8,001	1,280	1,707	31,919	42,907
TOTAL, MIDWESTERN ONTARIO REGION	50,831	15,991	13,463	71,193	151,478

TABLE 14.

PRINCIPAL STATISTICS OF THE MANUFACTURING INDUSTRIES, COUNTIES, MIDWESTERN ONTARIO REGION AND PROVINCE OF ONTARIO, 1961 TO 1966

	Establish- ments No.	Production And Related Workers					MANUFACTURING ACTIVITY				TOTAL ACTIVITY			
		Number (2)	Man- hours Paid \$'000 (3)	Wages \$'000 (4)	Cost Of		Value Of Ship- ments Of Goods Of Own Manufacture \$'000 (7)	Value Added - Manufacturing Activity \$'000 (8)	Working Owners And Partners Withdrawals		Total Employe... Salaries And Wages \$'000 (12)	Value Added \$'000 (13)		
					Electricity \$'000 (5)	Materials And Supplies Used \$'000 (6)			Number (9)	\$'000 (10)			Number (11)	
HURON	1961	118	1,384	4,050	507	19,722	31,258	11,163	71	225	1,941	6,244	11,851	
	1962	116	1,345	4,152	468	18,985	30,010	10,804	69	230	1,833	6,325	11,198	
	1963	112	1,352	4,166	475	19,631	31,614	11,324	69	247	1,826	6,472	11,883	
	1964	112	1,433	4,500	538	21,424	34,784	13,223	59	242	1,940	6,945	13,912	
	1965	102	1,577	5,260	569	24,087	38,908	14,253	59	254	2,105	7,960	15,029	
	1966	101	1,790	6,705	598	26,108	44,610	18,517	61	269	2,279	9,358	18,788	
PERTH	1961	148	4,211	12,731	2,555	58,754	98,950	37,766	66	249	5,566	19,225	38,490	
	1962	148	4,420	14,099	2,771	63,493	109,949	45,233	67	258	5,762	21,246	47,850	
	1963	149	5,056	16,832	3,032	78,282	133,156	52,586	58	230	6,514	24,567	53,983	
	1964	148	5,349	18,826	3,307	85,636	147,188	59,430	59	225	6,828	27,147	60,952	
	1965	152	5,970	22,514	3,810	89,696	158,888	66,353	58	281	7,619	32,145	68,134	
	1966	150	6,306	25,406	4,248	99,437	172,576	70,651	52	276	8,060	35,629	72,181	
WATERLOO	1961	538	24,302	86,672	6,137	262,519	504,760	232,544	214	794	32,390	129,155	237,351	
	1962	551	26,884	97,936	6,791	309,319	564,453	253,895	211	824	34,875	141,063	259,663	
	1963	547	28,811	108,755	7,098	339,299	620,380	281,394	189	744	36,980	154,145	287,731	
	1964	571	30,156	119,169	7,833	373,366	681,024	308,498	195	816	38,889	168,929	315,731	
	1965	582	32,196	132,585	8,522	409,166	755,601	350,370	192	904	41,675	187,941	358,244	
	1966	596	34,370	149,911	9,584	457,566	834,052	387,771	186	914	44,004	209,307	395,245	
WELLINGTON	1961	220	6,768	22,708	2,607	76,408	148,215	67,311	113	400	9,254	34,975	69,434	
	1962	224	7,078	24,776	2,493	89,241	165,235	76,959	107	383	9,456	36,924	79,654	
	1963	224	7,515	28,216	2,634	97,621	182,987	82,287	111	423	9,978	41,101	85,448	
	1964	226	7,760	30,218	2,905	110,205	201,490	90,082	116	476	10,139	42,974	95,585	
	1965	230	8,630	35,108	3,544	129,667	237,595	109,812	106	459	11,217	49,241	114,587	
	1966	235	9,132	39,041	3,941	142,300	262,919	120,978	104	432	11,912	55,963	125,672	
TOTAL, MIDWESTERN ONTARIO REGION	1961	1,024	36,665	126,161	11,806	437,403	783,183	348,784	464	1,668	49,151	189,599	357,126	
	1962	1,039	39,627	140,963	12,523	481,038	869,647	386,891	454	1,695	51,926	205,558	398,365	
	1963	1,032	42,734	157,969	13,239	534,833	968,137	427,591	427	1,644	55,298	226,285	439,045	
	1964	1,047	44,698	172,713	14,643	590,631	1,064,486	471,233	429	1,759	57,796	245,995	486,180	
	1965	1,066	48,373	195,467	16,445	652,616	1,190,992	540,788	415	1,898	62,616	277,287	555,994	
	1966	1,082	51,598	221,063	18,371	725,411	1,314,157	597,917	403	1,891	66,255	310,257	611,887	
TOTAL, PROVINCE OF ONTARIO	1961	12,419	433,059	912,762	237,405	6,129,239	11,563,734	5,244,846	5,973	22,157	638,757	2,859,652	5,553,191	
	1962	12,585	456,026	968,720	249,459	6,944,729	12,919,454	5,815,088	6,044	23,115	662,533	3,078,549	6,149,611	
	1963	12,489	478,370	1,019,058	2,080,555	7,745,076	14,262,208	6,369,483	5,726	22,999	690,470	3,335,582	6,729,111	
	1964	12,781	504,758	1,042,937	2,320,944	8,627,975	15,842,949	7,066,985	5,065	23,591	728,936	3,666,810	7,489,116	
	1965	12,766	543,501	1,163,850	314,290	9,668,876	17,675,865	7,881,825	5,108	23,738	774,738	4,100,212	8,421,721	
	1966	12,986	578,559	1,232,025	339,748	10,712,883	19,452,570	8,648,180	5,101	24,304	820,465	4,571,961	9,209,568	

Source: Canada, Dominion Bureau of Statistics, Census of Manufacturing Industries of Canada, 1964, (Ottawa: Queen's Printer, 1964), Section C, Geographical Distribution.Canada, Dominion Bureau of Statistics, Census of Manufacturing Industries of Canada, Preliminary Bulletin, 1966

TABLE 35.

RETAIL TRADE, SALES, PER CAPITA SALES, STORES AND EMPLOYEES, COUNTIES AND INCORPORATED PLACES OF 5,000 POPULATION AND OVER, MIDWESTERN ONTARIO REGION, 1951, 1961 AND 1966

	SALES				PER CAPITA SALES						
	1951	1961	1966	% Change	1966/1961	% Change	1966/1951	% Change	1966/1961	% Change	1966/1951
	\$000's (1)	\$000's (2)	\$000's (3)	1961/1951 (4)	1966/1961 (5)	1966/1951 (6)	\$ (7)	\$ (8)	\$ (9)	1966/1961 (11)	1966/1951 (12)
HURON ^a	29,234.0	40,241.4	54,162.2	37.7	34.6	85.3	593	748	995	33.0	67.8
Goderich ab	6,358.5	9,676.1	14,315.5	52.2	47.9	125.1	1,289	1,509	2,133	41.4	65.5
PERTH	41,165.5	52,454.3	73,736.0	27.4	40.6	79.1	783	913	1,220	33.6	55.8
Stratford a	21,846.8	25,756.8	38,830.0	17.9	50.8	77.7	1,163	1,258	1,683	33.8	44.7
WATERLOO	100,134.7	171,124.9	269,226.5	70.9	57.3	168.9	794	968	1,242	28.3	56.4
Caft ab	18,859.4	30,279.9	42,595.4	60.6	40.7	125.9	982	1,088	1,272	16.9	29.5
Kitchener ab	51,039.9	96,724.3	129,261.0	89.5	33.6	153.3	1,138	1,299	1,386	6.7	21.8
Preston a	6,735.7	8,002.2	13,553.1	18.8	69.4	101.2	884	691	1,013	46.6	14.6
Waterloo ab	7,741.4	14,728.2	39,203.1	90.3	166.2	406.4	646	689	1,312	6.7	103.1
WELLINGTON	48,322.0	70,371.7	101,406.1	45.6	44.1	109.9	722	831	1,077	29.6	49.2
Guelph ab	29,736.1	47,026.6	69,667.0	58.1	48.1	134.3	1,086	1,180	1,356	14.9	24.9
TOTAL, MIDWESTERN ONTARIO REGION	218,856.2	334,192.3	498,530.8	52.7	49.2	127.8	742	897	1,171	20.9	57.8
TOTAL, PROVINCE OF ONTARIO	3,666,371.4	6,206,684.5	8,634,073.7	69.3	39.1	135.5	797	995	1,240	24.8	55.6

*All data (column 19) adjusted to allow for changes in Standard Industrial Classification between 1951 and 1961.

Classification changes, 1951 to 1961

Restaurants, caterers, cocktail lounges, taverns, dressmakers - from Retail to Service.

Automotive repair shops (several kinds), radio and T.V. repair shops, jewellery repair and engraving, bicycle repair - from Service to Retail.

a Not strictly comparable due to boundary changes between 1951 and 1961.

b Not strictly comparable due to boundary changes between 1961 and 1966.

Sources: Canada, Dominion Bureau of Statistics, Census of Retail Trade, 1951 and 1961 (Ottawa: Queen's Printer, 1951 and 1961), Table 8, Table 4 and Table 6.

Canada, Dominion Bureau of Statistics, Advance Bulletin of Census of Retail Trade, 1966.

Canada, Dominion Bureau of Statistics, Unpublished data on Retail Trade, 1966.

TABLE 35.

STORES					EMPLOYEES				
1951 No. (13)	1961 No. (14)	1966 No. (15)	% Change 1961/1951 (16)	% Change 1966/1961 (17)	% Change 1966/1951 (18)	1951* No. (19)	1961 No. (20)	% Change 1961/1951 (21)	
609	599	583	-1.6	-2.7	-4.3	1,055	1,270	20.4	
107	106	108	-0.9	1.9	0.9	264	333	26.1	
627	614	570	-2.1	-7.2	-9.1	1,713	1,695	-1.1	
226	223	222	-1.3	-0.4	-1.8	1,062	981	-7.6	
1,264	1,446	1,462	14.4	1.1	15.7	4,605	6,111	32.7	
225	272	266	20.9	-2.2	18.2	891	1,136	27.5	
467	605	593	29.6	-2.0	27.0	2,612	3,556	36.1	
99	97	95	-2.0	-2.1	-4.0	288	289	0.3	
110	137	157	24.5	14.6	42.7	338	518	53.3	
788	831	796	5.4	-4.2	1.0	2,093	2,498	19.4	
321	371	390	15.6	5.1	21.5	1,459	1,813	24.3	
3,288	3,490	3,411	6.1	-2.3	3.7	9,466	11,574	22.3	
45,077	52,157	51,119	15.7	-2.0	13.4	187,819	233,563	24.4	

TABLE 36.

WHOLESALE TRADE, SALES, PER CAPITA SALES, LOCATIONS AND EMPLOYEES, COUNTIES AND INCORPORATED PLACES OF 5,000 POPULATION AND OVER, MIDWESTERN ONTARIO REGION, 1951 AND 1961

	SALES			PER CAPITA SALES			LOCATIONS			EMPLOYEES		
	1951*	1961	% Change	1951	1961	% Change	1951	1961	% Change	1951**	1961	% Change
	\$000's (1)	\$000's (2)	1961/1951 (3)	\$ (4)	\$ (5)	1961/1951 (6)	No. (7)	No. (8)	1961/1951 (9)	No. (10)	No. (11)	1961/1951 (12)
HURON ^a	35,221.4	29,708.7	-15.7	715	552	-22.8	135	127	-5.9	297	429	44.4
Goderich ^a	n.a.	2,989.8	n.a.	n.a.	466	n.a.	n.a.	14	n.a.	n.a.	50	n.a.
PERTH	21,804.4	34,921.9	60.2	415	608	46.5	103	121	17.5	393	600	52.7
Stratford ^a	9,329.9	9,308.8	-0.2	497	455	-8.4	n.a.	24	n.a.	186	205	10.2
WATERLOO	63,549.8	129,666.7	104.0	504	734	45.6	204	288	41.2	1,333	2,549	91.2
Galt ^a	4,783.6	14,819.9	209.8	249	533	114.1	n.a.	47	n.a.	84	336	300.0
Kitchener ^a	46,274.4	75,158.4	62.4	1,031	1,009	-2.1	n.a.	130	n.a.	1,007	1,614	60.3
Preston ^a	257.5	2,559.1	893.8	34	221	550.0	n.a.	11	n.a.	9	46	411.1
Waterloo ^a	4,883.0	4,054.2	-17.0	407	190	-53.3	n.a.	21	n.a.	94	95	1.1
WELLINGTON	22,675.3	35,085.3	54.7	339	414	22.1	135	173	28.1	445	693	55.7
Guelph ^a	11,179.4	18,758.8	67.8	408	471	15.4	n.a.	59	n.a.	280	401	43.2
TOTAL, MIDWESTERN ONTARIO REGION	143,250.9	229,382.6	60.1	486	615	26.5	577	709	22.9	2,468	4,271	73.1
TOTAL, PROVINCE OF ONTARIO	4,647,484.0	6,126,188.8	31.8	1,011	982	-2.9	8,333	10,105	21.3	71,391	90,346	26.6

n.a. Not available.

*Data (column 1) for incorporated places of 5,000 population and over, have been adjusted by the Regional Development Research Section to allow for changes in Standard Industrial Classification between 1951 and 1961.

**All data (column 10) adjusted to allow for changes in Standard Industrial Classification between 1951 and 1961.

Classification changes 1951 to 1961: Lumber and building material dealers, farm implement dealers, feed stores, farm supply stores, harness shops - from retail to wholesale.

^aNot strictly comparable due to boundary changes between 1951 and 1961.

Source: Canada, Dominion Bureau of Statistics, Census of Canada, Wholesale Trade, 1951 and 1961 (Ottawa: Queen's Printer), Table 5, Table 7 and Table 8.

TABLE 37.

SERVICE TRADES, RECEIPTS, PER CAPITA RECEIPTS, LOCATIONS AND EMPLOYEES, COUNTIES AND INCORPORATED PLACES OF 5,000 POPULATION AND OVER, MIDWESTERN ONTARIO REGION, 1951 AND 1961

	RECEIPTS			PER CAPITA RECEIPTS			LOCATIONS			EMPLOYEES		
	1951	1961	% Change	1951	1961	% Change	1951	1961	% Change	1951*	1961	% Change
	\$000's (1)	\$000's (2)	1961/1951 (3)	\$ (4)	\$ (5)	1961/1951 (6)	No. (7)	No. (8)	1961/1951 (9)	No. (10)	No. (11)	1961/1951 (12)
HURON ^a	2,098.2	3,758.9	79.1	43	70	62.8	221	257	16.3	348	338	-2.9
Goderich ^a	517.7	821.7	58.7	105	128	21.9	43	53	23.3	103	81	-21.4
PERTH	3,195.7	5,719.2	79.0	61	100	63.9	202	246	21.8	409	676	65.3
Stratford ^a	2,116.6	3,246.9	53.4	113	159	40.7	97	102	5.2	292	427	46.2
WATERLOO	11,771.1	22,747.4	93.2	93	129	38.7	528	792	50.0	1,648	2,861	73.6
Galt ^a	1,983.1	2,979.5	50.2	103	107	3.9	84	106	26.2	261	352	34.9
Kitchener ^a	5,230.5	12,192.9	133.1	117	164	40.2	205	375	82.9	822	1,657	101.6
Preston ^a	764.7	1,716.1	124.4	100	148	48.0	37	61	64.9	113	263	132.7
Waterloo ^a	1,555.3	2,218.1	42.6	130	104	-20.0	63	75	19.0	185	226	22.2
WELLINGTON	5,476.9	8,705.3	58.9	82	103	25.6	277	366	32.1	745	1,031	38.4
Guelph ^a	3,557.4	5,776.4	62.4	130	145	11.5	142	191	34.5	519	743	43.2
TOTAL, MIDWESTERN ONTARIO REGION	22,541.9	40,930.8	81.6	76	110	44.7	1,228	1,661	35.3	3,150	4,906	55.7
TOTAL, PROVINCE OF ONTARIO	573,292.9	1,175,641.8	105.1	125	189	51.2	22,126	32,014	44.7	91,397	125,263	37.1

*All data (column 10) adjusted to allow for changes in Standard Industrial Classification between 1951 and 1961.

Classification changes 1951 to 1961.

Restaurants, caterers, cocktail lounges, taverns, dressmakers - from retail to service.

Automotive repair shops (several kinds), radio and I.V. repair shops, jewellery repair and engraving, bicycle repair - from service to retail.

Dental laboratories, electro-plating, machine shops, upholstery shops - from service to manufacturing.

aNot strictly comparable due to boundary changes between 1951 and 1961.

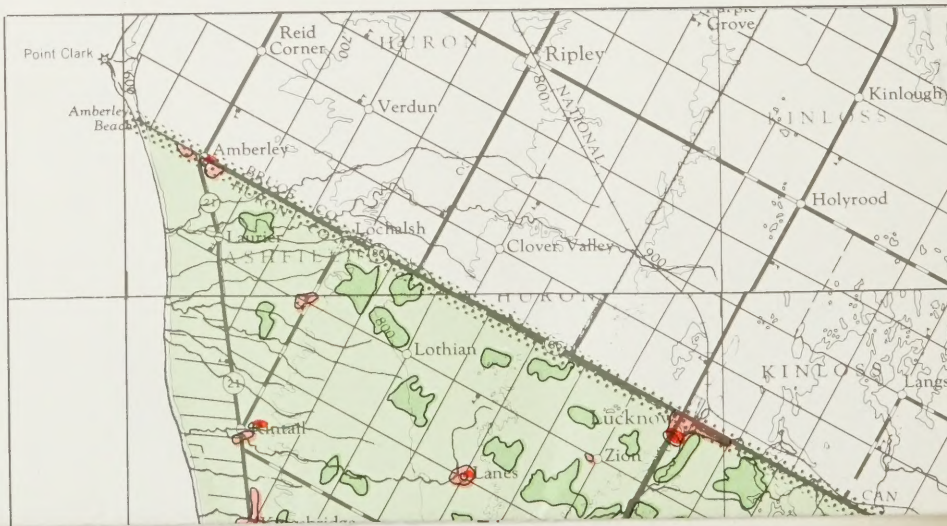
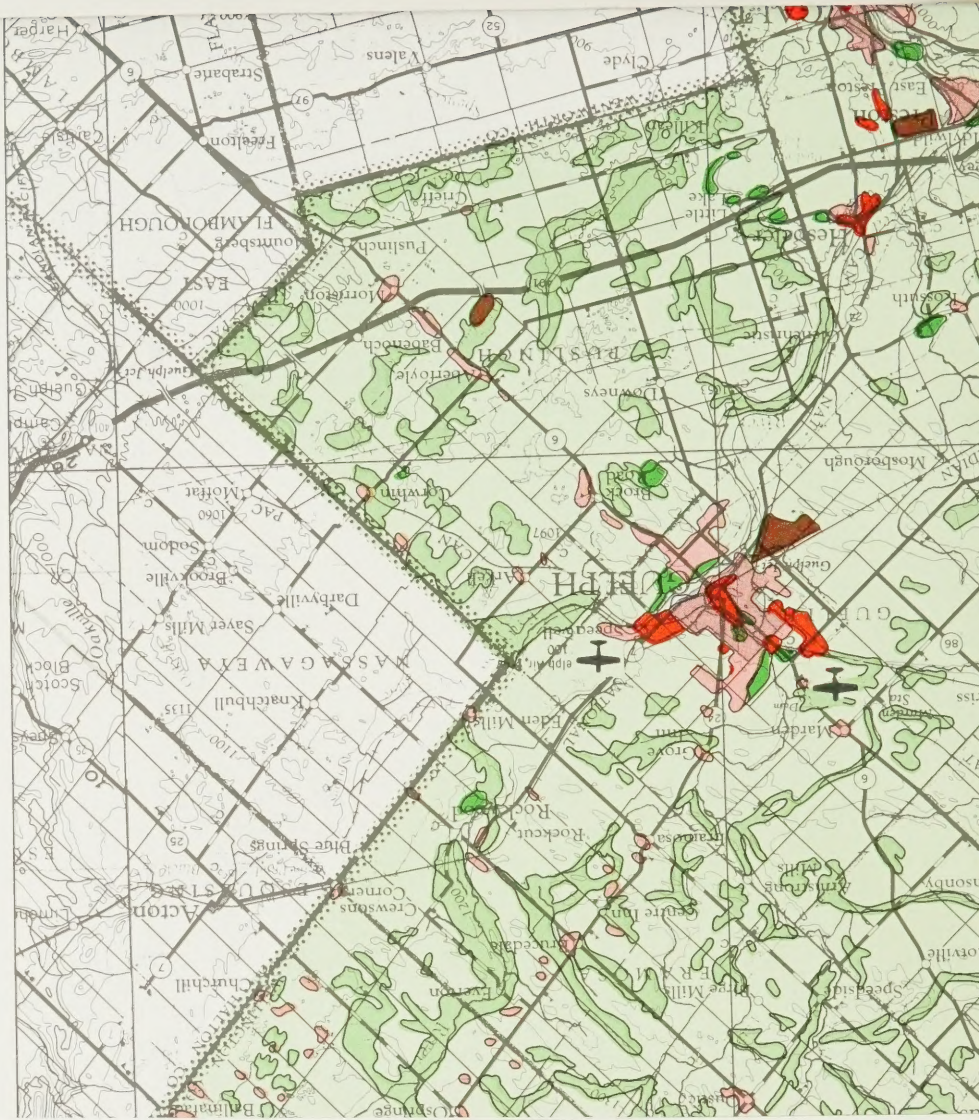
Source: Canada, Dominion Bureau of Statistics, Census of Canada, Service Trades, 1951 and 1961 (Ottawa: Queen's Printer), Table 23, Table 31 and Table 33.

MIDWESTERN ONTARIO DEVELOPMENT REGION

GENERALIZED EXISTING LAND USE

LEGEND





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